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AIR CONDITIONING HEATING & REFRIGERATION **NEWS**

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Air Conditioned Classrooms Will Save Taxpayers Money, Educate More Young People

(Conscience of the Industry Editorial by George F. Taubeneck)

RESPONSE to the "Inside Dope" proposal of trisemester (third summer term as standard practice) three-year college programs has been electric.

Moreover, there is considerable evidence that the idea is sound and feasible from an academic standpoint.

President Clarence Hilberry of Wayne State university tells us that his school is ready for it. It's already in operation at the universities of Chicago, Cincinnati, and Pittsburgh. And a subscriber in Scotland reports that a trisemester three-year college degree has been standard practice in that cool clime for almost a century.

This idea is a tremendous challenge to our industry. With that challenge comes not only the opportunity for profit,

(Continued on Page 22)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Watch It, Fellows!

Inventories have been called the "graveyard of American business" because so frequently they have been the prime cause of business failures and voluntary liquidations.

Roy A. Foulke, vice president of Dun & Bradstreet, Inc., declares that two primary causes of inventory losses are inventory price drops plus obsolescence.

A raise in the quoted worth of inventory may bring new life to a marginal firm, but when a downward trend sets in, that inventory on hand must be marked down in order to be utilized in a competitive market.

Losses are taken in the process, naturally.

Fluctuations in materials costs which cause losses or gains are far more common than is ordinarily assumed.

Committed and undelivered inventory can be just as much of a problem as inventory on hand, furthermore.

Mr. Foulke mentions three "psychological spark-plugs" on which management decisions, budgets, and policies depend. These are:

The expected level of prices of raw materials or finished products, the expected volume of sales in months ahead, and the expected volume of profits in months ahead.

Said factors affect all companies, small or large.

In giant corporations, inventory (even when not on hand) can cause problems. Many raw materials and finished products are contracted for months or even years ahead by larger corporations.

If sales fail to materialize, and inventory commitments cannot be curtailed, a serious inventory situation can occur even before the "inventory" reaches the premises.

Yet, there are guides which can lead businessmen to fuller comprehension of inventories and their control. Two important guides are the financial ratios of Net Sales to Inventory and Net Working Capital to Inventory.

Computation and use of these ratios will help many businessmen to understand better the financial aspects of inventory and, when combined with awareness of style, customer needs, and new product developments,

(Continued on Page 16, Col. 1)

'Freon' Div. Publishes Sales Policy

WILMINGTON, Del.—A published statement of its field sales policy on its line of refrigerants has recently been issued by "Freon" Products Div., Du Pont Co.

"Although we have been following this sales policy for a number of years," says a company official, "so far as I can determine, this is the first time it has been placed before the industry in printed form."

"Since we all recognize that

(Continued on Back Page, Col. 1)

Strikes Cost Carrier 25% Loss In Sales

SYRACUSE, N. Y. — Net sales of Carrier Corp. for the three months ended April 30, 1960 were 25% below those of the corresponding period a year ago, reflecting the effects of two strikes called by the United Steelworkers of America, the company reported. A net loss of $1,530,000 was incurred.

Carrier also reported that orders booked during the five

(Continued on Back Page, Col. 3)

Craft Unions Win Round In Battle with Industrials

NLRB Favors Them In Contracting-Out Case

WASHINGTON, D. C. — By reversing a trial examiner's recommendation, the National Labor Relations Board has apparently awarded AFL-CIO craft unions a victory over industrial unions in their dispute about contracting out plant construction and maintenance work.

NLRB unanimously ruled that there was nothing in the contract between the Tennessee Coal & Iron Div. of U. S. Steel Corp. near Birmingham, Ala. and the United Steel Workers union that prevented the company from subcontracting its construction work.

Thus, NLRB said, the steel workers, in picketing construction subcontracted to outside firms, was trying to coerce one employer from doing business with another thereby engaging in a secondary boycott.

Trial Examiner George A. Downing had recommended a ruling that there was no secondary boycott. (See earlier

(Continued on Page 41, Col. 1)

160 To Exhibit At NAPC Parley

CLEVELAND—Products and services of more than 160 exhibitors will go on display at the National Plumbing-Heating-Cooling Exposition to be staged in conjunction with the 78th annual convention of the National Association of Plumbing Contractors June 19-23 at Cleveland Municipal Auditorium.

The exposition and convention are expected to attract about 6,000 industry people, including contractors, wholesalers, manufacturers, and their families.

Official opening of the show is set for 1:30 p.m. Sunday, June 19, when the traditional ribbon-cutting ceremonies will be held. It will run until 5:30 p.m. that day.

On Monday, Tuesday, and Wednesday, the show will be open from 9 a.m. to 5 p.m. The exposition will be open to the trade only except for one day—Tuesday, June 21—when the public also will be admitted.

Official opening of the convention is scheduled for 10 a.m. Monday, June 20. Among highlights are six business seminars —two on heating—set for Tuesday afternoon.

Subjects for these panel dis-

(Continued on Page 41, Col. 2)

Atlanta Defers On Plumbing Code

ATLANTA — Compromise proposals have been reached in the proposed revision of Atlanta's plumbing code which would have required appliance dealers to report, daily, all sales of appliances that require connection with water systems.

Also a compromise was reached in the requirements for installation of water heaters.

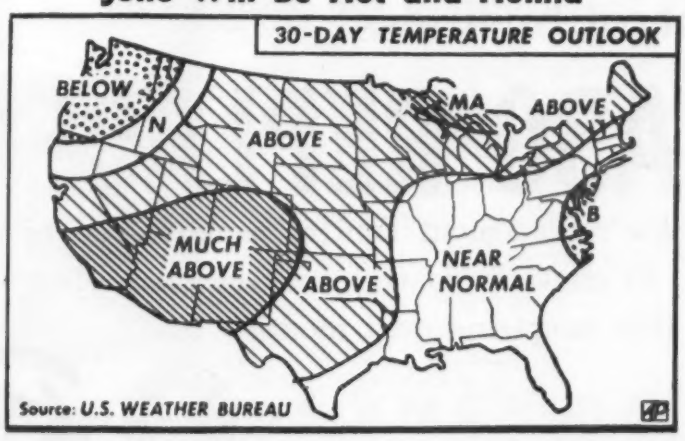
The city agreed to drop the proposal on reporting sales. Under the proposed plan dealers would have had to make reports daily to the city giving names, addresses of purchasers and types of appliances sold.

Alderman William A. Sims, Jr., reported also that an agreement had been reached on restrictions of water heaters which would have required journeyman plumbers to make installations.

Sims said it was agreed that

(Continued on Page 41, Col. 1)

June Will Be Hot and Humid



A HOT AND WET JUNE is in prospect for much of the country, according to the U. S. Weather Bureau. The Bureau predicts above normal temperatures for the Great Lakes region and most of the western half of the country. Precipitation is expected to exceed normal in most of the country.

Westinghouse Names Cannon to Sales Post

STAUNTON, Va. — Carl E. Cannon has been appointed product sales manager for electric heating at the Westinghouse Electric Corp.'s air conditioning division, it has been announced by Donald R. Meckstroth, marketing manager of the air conditioning division.

Production and distribution of Westinghouse electric heating equipment is being conducted as part of the Westing-

(Continued on Back Page, Col. 1)

Court Upholds City's Demand Charge On Water Wasting Air Conditioning

By George M. Hanning

DETROIT — A group of theater owners protesting a water demand charge on users of non-circulating air conditioning equipment for human comfort lost their case in Circuit Court here recently.

Judge George E. Bowles dismissed their suit against the city board of water commissioners, finding that the city's $7.50 per ton of refrigeration demand charge was both reasonable and proper.

The theater owners had charged that the demand charge, over and above the regular water rates, was discriminatory, confiscatory, unreasonable, and constitutionally offensive.

They charged that the non-circulating air conditioning (NCAC) classification set up by the water board was not a true classification because it omitted similar users of water, such as lawn sprinklers and industrial refrigeration, which also require extra water at peak periods.

Water board witnesses testified that NCAC users were not paying their share of the cost of service to them. They argued that those who put extra demand on the water system were obliged to pay the cost of facilities to meet the demand.

Witnesses pointed out that even with restrictions on lawn sprinkling and the demand charge on NCAC, NCAC users were paying only 54.5% of the cost of service to them.

They explained that cost of NCAC service in 1958 was $13.05 per ton and revenue, without the demand charge, from NCAC users was only $4.11 per ton. Thus, with a deficit of $8.95 per ton, even the $7.50 demand charge did not meet actual cost.

Water board argued that lawn sprinkling was not in the same classification as NCAC because lawn sprinkling could be regulated to non-peak periods while the same could not be done with NCAC.

Judge Bowles accepted generally the water board's arguments.

He asserted:

"If a group of customers place an unusual and distinctive burden upon the system at peak demand, it is not unreasonable or constitutionally offensive to determine a rate or charge for that group of customers based in part on the readiness of the system to serve at the peak hour, keeping in mind any additional capital investment that is requisite to meet that peak hour."

He found that "NCAC use is distinguishable in its characteristics from other summer users so that the classification is a constitutional one.

"While the use to which water is put is not a proper basis for constitutional classification, differences in the characteristics of use do justify a separate class for NCAC users."

Assistant corporation counsel Robert Reese, who argued the city's case, estimated that the water commission will collect more than $700,000 through the additional rate. He said it has already collected nearly a million dollars in the four years that the regulation has been in force.

Fedders Condemns Ads Misusing Words 'Excise Tax Free'

NEW YORK CITY—Fedders Corp. has asked all its distributors to police dealer advertisements containing reference to "excise tax free" room air conditioners.

"Indiscriminate use of the words 'excise tax free' in some of our industry's advertising . . . has created confusion and reduced to the marginal level any possible advantages in advertisements concerning excise tax," E. M. Becker, Fedders sales manager for room air conditioners declared in a letter to distributors and all regional and district managers.

Becker asserted that "unqualified use of the words 'excise tax free' will not be permitted.

Advertisements indicating that the tax was sudden and without notice are not factual and unfair to I.R.S. (Internal Revenue Service). This must also be eliminated.

"We ask that each distributor make available to its dealers a certification of the number of tax free units purchased by each dealer who will advertise tax free units.

"We further recommend that each dealer advertise the quantity of tax free units which may be available for sale.

"Whole-hearted emphasis on these simple rules, if followed by our industry, would do much to eliminate the confusion which has arisen."

Tax free room air conditioners are those of 1 hp. or larger sold by the manufacturer prior to Dec. 1, 1959.

How Many Cups of Java to a Compressor?

DETROIT — The barter system extinct? Well, not quite, according to Kelvinator International Corp.

The company is shipping 4,000 refrigerator compressors from its Bromborough, England plant to Colombia. The price? Over 200,000 lbs. of coffee.

In this modern age of bank credit and checks, how did a barter transaction occur? Kelvinator International's Vice President G. T. Etheridge tells it this way.

The company's Colombian licensee, Industria Colombiana de Refrigeracion, produces refrigerator cabinets, but not the compressors. Because the country has a shortage of foreign exchange, the licensee's hands were tied.

They needed British pounds to make the deal. But then, there are all kinds of pounds . . . coffee, for instance.

It suggested to the management of Kelvinator's Bromborough plant that an arrangement could be made to exchange compressors for coffee. Sounds like heresy in tea-drinking England, but the possibility was pursued with a London coffee broker to make sure the coffee could be sold.

Final arrangements have been completed and 4,000 ⅛-hp. compressors will be speeded on their merry way from England to Colombia.

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Brewer-Titchener Drops Refrigeration, Disposes of Venders, Bottle Coolers

CORTLAND, N. Y.—In an announcement of transactions with Seeburg Corp. of Chicago and International Beverage Supply, Inc., The Brewer-Titchener Corp. here disclosed that it is discontinuing the manufacture of commercial refrigeration equipment.

By disposing of the Refrigeration Div., the announcement said, Brewer-Titchener "is channeling its efforts to further augment its activities in the several other markets served by its three major plants in Cortland and Binghamton, N. Y." Basically, these involve forgings and stampings activities, according to a company spokesman.

The Seeburg Corp. and Brewer - Titchener announced that Seeburg is acquiring all of the rights to manufacture and distribute the line of upright visual bottle venders introduced early this year by BTC.

This line of venders, which will be manufactured in Seeburg's Choice Vend Div. in Hartford, Conn., rounds out its line of cold bottle vending equipment for the carbonated beverage industry. Domestic distribution will be handled by International Beverage Supply, Inc.

At the same time, International Beverage Supply and Brewer - Titchener announced that the former is acquiring all of the rights to manufacture and distribute the line of BTC and ArtKraft flat-top and forced draft bottle coolers.

"This long established line of coolers will be manufactured under the initial supervision of BTC personnel," the announcement said. "Also, International Beverage Supply will carry out outstanding warranty commitments on BTC bottle coolers in the field."

Other commercial refrigeration products made by BTC's Refrigeration Div. will be discontinued, the spokesman said.

Crane Appeals Briggs Injunction

DETROIT—Crane Co. attorneys revealed they had appealed, in the Sixth Federal Circuit Court of Appeals in Cincinnati, Federal Judge Theodore Levin's grant of a temporary injunction to Briggs Mfg. Co. and had asked for a hearing of the appeal Saturday, June 4.

Judge Levin enjoined Crane from further soliciting proxies for the Briggs annual meeting June 17 and ruled that Crane could not vote the Briggs stock it holds. The action stemmed from a suit in which Briggs charged that Crane is violating anti-trust laws by purchasing Briggs stock.

Crane has nominated a full slate of seven directors for election to the Briggs board. Judge Levin ruled that Briggs has shown "it is in immediate danger of irreparable injury" if any of the Crane nominees were elected to its board, and "there is a reasonable probability of a violation of Section 7 of the Clayton Act" by Crane.

Rainey Gets New Post

HYDE PARK, Mass.—H. W. Rainey has been named marketing manager of the Westinghouse Sturtevant Div., it was announced by J. W. Wilcock, division manager.

H. W. Rainey

Formerly general sales manager, Rainey will be responsible for all phases of marketing activity, including field sales and marketing services.

Won't Testify for FTC, Fined $1,000

WASHINGTON, D. C. — Joseph Freeman, president of Gift Products, Inc., Chicago, has been fined $1,000 by the U. S. District Court for the Northern District of Illinois, Eastern Div., in a criminal case stemming from his refusal to testify in a Federal Trade Commission proceeding against him when under subpoena, the FTC recently reported.

This is believed to be the first successful criminal prosecution for failure to give testimony at hearings before a Federal regulatory agency in response to a subpoena. The prosecution was instituted by the Department of Justice at the request of the FTC, which is one of several independent agencies having statutory power to request criminal sanctions in these circumstances.

Remington Sales Up 66% In 6 Mos. Period

AUBURN, N. Y. — Domestic sales of Remington room air conditioners for the first half of fiscal 1960, which ended on April 30, were 66% ahead of the same period of 1959, according to Herbert L. Laube, president of Remington Corp.

"Unquestionably the sale last fall of pre-excise tax units contributed substantially to this increase," said Laube. "Nevertheless, sales since Dec. 1, 1959, the date on which the 10% Federal excise tax became applicable to all models, were virtually equal to total domestic sales for the first half of 1959.

"This indicates to us that 1960 may well be a better room air conditioner year than was 1959."

Laube added that his company's 1960 export sales are also much better than for 1959, that 1960 production schedules have recently been stepped up, and that Remington is currently in the midst of an expansion program designed to increase the productive capacity of its Auburn plant.

EEI To Hear Talk on Electric Heat June 7

ATLANTIC CITY, N. J. — A talk on "Electric Heat—The Big Market of the Sixties" is one of the presentations programmed for Edison Electric Institute's 28th annual convention to be held here June 6-8.

The talk will be given by Thomas G. Ayers, vice president, Commonwealth Edison Co., Chicago, on Tuesday morning, June 7. All general convention sessions will be held in the Warren Theater on the Boardwalk.

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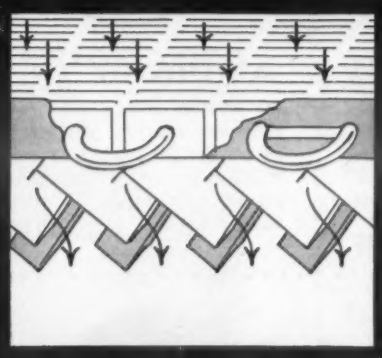

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Hourly Reports Issued

Controversial Temperature-Humidity Index Returns to New York City

NEW YORK CITY—The controversial Temperature - Humidity Index returned to New York City last week.

On June 1, the U. S. Weather Bureau here began publishing hourly data and announced that it would keep it up until cooler weather returns in September.

The Temperature - Humidity Index, first used last year, is a numerical representation of the combined temperature and humidity at any particular time.

It is computed by adding the wet and dry-bulb readings together, multiplying by .4, and adding 15. Thus, with a dry-bulb temperature of 80° F. and a wet-bulb temperature of 75° F., the computation would be $80 + 75 = 155$. $155 \times .4 = 62$. $62 + 15 = 77$. Thus, the Temperature-Humidity Index would be 77.

With a T-H Index of 70, the Weather Bureau indicates, about 10% of the people will feel uncomfortable. At 75, half will feel uncomfortable. At 79, almost everybody will be uncomfortable.

When the index was first used last year, it was called the Discomfort Index. However, New York hotel and tourist interests protested the word "discomfort." It never gets uncomfortably hot in Gotham, they say. Air conditioning dealers have found the index valuable as a sales tool.

April Gas Conversion Burner Sales 17.5% Ahead of Last Year—GAMA

NEW YORK CITY — April shipments by manufacturers of gas conversion burners were 17.5% ahead of the April, 1959 level, the Gas Appliance Manufacturers Association reported.

The monthly telegraphic survey of manufacturers conducted by Edward R. Martin, GAMA's director of marketing and statistics, showed that 7,400 conversion units were sent to market during the month, compared to 6,300 dispatched in the same month of last year. The total for the first four months of 1960 was 30,800, a 22.7% improvement over the 25,100 for the same period of 1959.

April sales of gas-fired boilers, Martin said, were logged at 9,404 units, 3.5% less than the 9,746 boilers shipped in April, 1959. The four-month totals for this equipment were 33,912 this year and 30,419 last year, an 11.5% increase.

Shipments of gas-fired furnaces, including the forced warm air and gravity types, totaled 63,900 for the month and 245,000 for the January-April period. These compared to the year-ago figures of 73,200 and 268,800, for reductions of 12.7 and 8.9%, respectively.

Combined shipments of the three types of central heating equipment amounted to 80,704 units for the month, a drop of 9.6% from the 89,246 units dispatched in April, 1959. The four-month combined totals were 309,712 this year and 324,319 last year, a 4.5% decline.

The April and four-month shipment figures for other types of gas heating equipment were as follows:

Gas unit heaters and duct furnaces—shipments of this equipment, which is used primarily for commercial and industrial applications, increased 19.2% for the month and 17.9% for the four-month period. The April totals were 11,800 this year and 9,900 last year, while the four-month amounts were 53,300 and 45,200.

Vented recessed wall heaters—April, 1960 shipments amounted to 30,600 units, a 3.8% decline from the 31,800 dispatched in the same month of 1959. The four-month totals were 109,600 this year and 127,200 last year, a 13.8% decrease.

Room heaters and other types of gas direct heating equipment—68,100 shipped in April, a 10.3% dip from last April's 75,900. This year's four-month total, 231,500, was 10% less than last year's 257,300.

Gas floor furnaces—The April figure was 7,200, a 14.3% improvement over the previous April's 6,300. The four-month total, however, was 10.2% less than the same period a year ago. The 1960 amount was 21,200 and last year's was 23,600.

1,200,000 Families Added Cooling In 1959, Carrier Says

SYRACUSE, N. Y. — Nearly 1,200,000 U.S. families switched on air conditioning in their homes for the first time in 1959, according to estimates prepared by Carrier Corp.

"Most of these householders purchased their first room air conditioner," the Carrier report said. "Some 200,000, many of whom already owned room units, improved their living standard by installing central air conditioning—either in new or existing homes.

"Nationally, the number of families with some form of home air conditioning increased from 4,320,000 in 1958 to 5,500,000 in 1959. The latter figure represents 10.6% of all U.S. households.

"Total air conditioning sales hit new highs last year as central installations rose from about 140,000 in 1958 to 200,000 and the sale of room units for homes rose from 1,023,000 to 1,142,000. Another 550,000 room units were sold for office or other commercial use and 125,000 units were exported."

Russell Gray, Carrier vice president, predicts that by 1965, 300,000 homes will be centrally air conditioned each year and 2,000,000 homes will be fully air conditioned by that date.

Texas led all states in the number of air conditioned homes with 731,000, it was stated. Three northern states, New York with 518,000 air conditioned homes, Illinois with 346,000, and Pennsylvania with 317,000, took the next three places on the list.

According to Carrier, here are the top 10 states in terms of the number of complete or partially air conditioned homes. Also included is the percentage of all homes in the state to have such equipment.

1.	Texas	731,000	26.5%
2.	New York	518,000	10.0%
3.	Illinois	346,000	11.2%
4.	Pennsylvania	317,000	9.6%
5.	Florida	303,000	22.5%
6.	Missouri	285,000	19.5%
7.	New Jersey	228,000	13.0%
8.	Louisiana	227,000	26.2%
9.	California	210,000	4.2%
10	Tennessee	195,000	20.5%

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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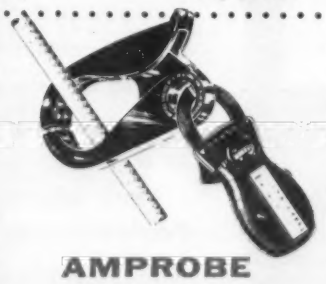

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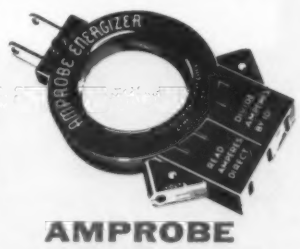

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Cooling Contractors

Form RACCA Chapter as Division of Memphis Piping Trades Association

WASHINGTON, D. C. — The Refrigeration & Air Conditioning Contractors Association (national) reported recently that a new chapter has been formed in Memphis.

Known as RACCA of Memphis, the chapter is a division of the Memphis Piping Trades association. MPT is an organization of plumbing, mechanical, air conditioning, and refrigeration contractors, and various combinations thereof.

In labor relations, it was pointed out, MPT normally negotiates a separate plumbing contract with a separate Plumbers local and a separate new construction contract with the Pipefitters local.

The report said RACCA of Memphis had begun negotiations on a separate air conditioning service contract. Previously, air conditioning service work had been covered in the new construction contract.

At the time the report was issued, RACCA of Memphis officially represented the following contractors in negotiations: Shelby-Skipwith, Inc.; Air Temperature, Inc.; Stephens Brothers, Inc.; Simpson Engineering Co.; J. F. Shelton Co.; Cook & Nichol Air Conditioning & Heating, Inc.; Hale-Manning Co.; Brainerd Co., Inc.; and T. E. S. Co. A. W. Shelby was named acting chairman of the Labor Committee.

Lyrical Cincinnati Links Cucumbers, Air Conditioning

CINCINNATI — "Cool as a Cucumber . . . Warm as Toast" will be the theme of the 1960 air conditioning promotion by the Cincinnati Gas & Electric Co. and the *Cincinnati Enquirer*.

Scheduled from June 13 through July 29, the promotion will include a display in the utility's lobby, a contest sponsored and promoted by the newspaper, a special supplement of the *Enquirer*, and a variety of other activities.

Merchandise on display in the utility's lobby will encompass room air conditioners, fans, heat pumps, gas year-round air conditioning units, and all types of electric heating equipment, according to the announcement.

After 3-Year Test, Jet-Heet Starts Producing Drive-In Heating System

ENGLEWOOD, N. J.—After a three-year testing period, its in-car drive-in heating system will be available on a mass-produced basis, according to an announcement by Jet-Heet, Inc. here.

Eastern Management Corp., operator of a chain of drive-ins, first installed the Jet-Heet system in its Totowa, N. J. drive-in three years ago.

"Totowa has remained open throughout the year since that time because of the revolutionary heating system and reported a 41.2% increase in business at the relatively minor operating cost of two cents per car per night," the announcement said. "Eastern Management predicts an 80% increase for next year and possibly triple that with the addition of Jet-Cool, companion central air conditioning which will be available with the Jet-Heet system."

According to Calvin D. MacCracken, president of Jet-Heet, the three-year test at Totowa was comparable to the 13-year field testing of the system in 2,000 homes throughout the country. The success of the system at Totowa will make drive-in theaters an all-year-round operation, he asserted.

The Jet-Heet system is said to be priced competitively with other heating units.

NEMA Issues Revised Data on Room Coolers

NEW YORK CITY—A second edition of its 1960 room air conditioner model data has been published by the National Electrical Manufacturers Association.

The new edition covers equipment manufactured by the 15 members of NEMA's room air conditioner section. Dated April 25, 1960, it supplants the first edition issued on March 1.

Changes include the addition of new models by four manufacturers and revisions of data on some models by four others.

Data includes model numbers, B.t.u.h. cooling capacity of each, horsepower rating, volts, watts, amperes, and whether or not the unit heats as well as cools.

These vital statistics are determined in accordance with NEMA standards for room air conditioners, CN-1-1958.

Association officials commented that these listings are released as a service by NEMA and NEMA does not assume any responsibility for the correctness of the data furnished by the several manufacturers.

O.K. $1.8 Million To Modernize Gibson

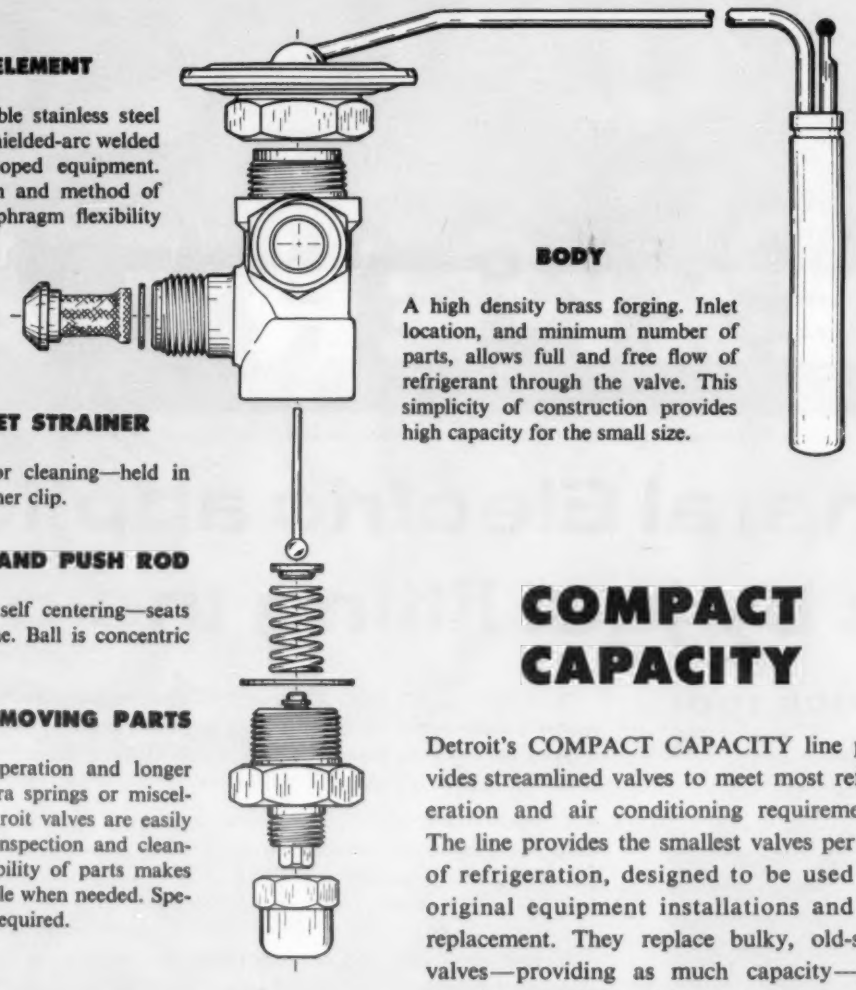
CLEVELAND — A $1.8 million replacement and modernization program at Gibson Refrigerator Div. in Greenville and Belding, Mich. has been approved by directors of Hupp Corp.

Don H. Gearheart, Hupp president, said the expenditures are primarily for machinery and equipment to increase efficiency and reduce manufacturing costs. They are a step in a program to make possible increased production.

The modernization program calls for installation of a new automated line for cutting sheet metal to proper lengths for forming, relocation of forming presses for improved work flow, and addition or replacement of other machinery and materials handling equipment.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

DETROIT Expansion Valves Last Longer · Operate Smoother



POWER ELEMENT

The small removable stainless steel power element is shielded-arc welded by specially developed equipment. In this new design and method of assembly, full diaphragm flexibility is accomplished.

BODY

A high density brass forging. Inlet location, and minimum number of parts, allows full and free flow of refrigerant through the valve. This simplicity of construction provides high capacity for the small size.

LARGE INLET STRAINER

Easily removed for cleaning—held in position by a retainer clip.

BALL NEEDLE AND PUSH ROD

Self aligning and self centering—seats perfectly every time. Ball is concentric to push rod.

ONLY THREE MOVING PARTS

—for smoother operation and longer life. No clips, extra springs or miscellaneous parts. Detroit valves are easily disassembled for inspection and cleaning. Ready availability of parts makes field service possible when needed. Special tools are not required.

COMPACT CAPACITY

Detroit's COMPACT CAPACITY line provides streamlined valves to meet most refrigeration and air conditioning requirements. The line provides the smallest valves per ton of refrigeration, designed to be used for original equipment installations and for replacement. They replace bulky, old-style valves—providing as much capacity—and can be installed without repiping. *See the COMPACT CAPACITY line at your Detroit Wholesalers.* Ask him, too, to show you the new valves with built-in inspection windows. Do it—today!

The Detroit 718 is just 2¼" high. When the valve is installed as shown here, inlet is at bottom and outlet is to the side. This allows easy replacement of most valves without repiping.

American-Standard and Standard ® are trademarks of American Radiator & Standard Sanitary Corporation.

AMERICAN-Standard

DETROIT CONTROLS DIVISION

Case Histories

Chamber of Commerce Pamphlets Tell How Firms Have Improved Operations

WASHINGTON, D. C.—When Ansul Chemical Co. of Marinette, Wis. found its costs outrunning profits, the company started a "cost concern" program.

Thirty top managers began reducing personal expenditures and meeting once a month to talk cost cuts. The managers asked the supervisors for ideas. The supervisors asked the workers:

What happened? After ten months the meetings ended, but everyone was so cost conscious that costs started a two-year decline. On a 3% sales increase, profits soared 40%.

Every two weeks at Standard Register Co., Dayton, a special committee awarded a "Bottleneck" trophy to a department. The trophy flew from one department to another. Each managed to get rid of it in a hurry, the company reports. Soon employes were bottleneck conscious. Standard retired the trophy. The contest had helped solve a problem.

These are but two of many examples in a series of eight manuals designed to show how to set up communications programs that will help management solve problems.

The pamphlets are the result of several year's work by the Business Relations Dept. of the Chamber of Commerce of the U. S. Personnel directors and managers at hundreds of plants cooperated. Issued singly in the past, the books are now being issued as a set for the first time.

There are five how-to-do-it manuals and three case studies.

For the set send $4 to the Business Relations Dept., Chamber of Commerce of the United States, 1615 H St., N.W., Washington 6, D. C. Single manuals cost 50 cents.

Wins 4-Yr. Scholarship

BATON ROUGE, La.—Francis J. Vicknair, Jr., senior in Catholic High school here, won a four-year scholarship to Louisiana State university for his display and explanation of a refrigeration system.

His interest in refrigeration has been stimulated by part time work at Atlas Refrigeration Supplies, Inc., a local ARW wholesaler.

To Better Help Dealers

Whirlpool Courses for Distributors Emphasize Better Management Practices

ST. JOSEPH, Mich.—Whirlpool Corp. announced that it is broadening the base of its campaign to institute sounder, more profitable business practices at the grass roots level.

"Already armed and in the field with a successful dealer development program," the firm has inaugurated a continuing series of seminars "geared to impress upon wholesale salesmen their key role in helping dealers to achieve this objective."

The new program works like this:

Approximately every 60 days, a group of no more than 25 distributor salesmen arrive at Whirlpool headquarters here from all sections of the country. Their objective:

1. Absorb methods by which they can help their dealers plan for profit.

2. Develop simple, more workable methods of sales and operating controls.

3. Achieve better understanding of their over-all responsibilities.

Stressed during the seminars is the need for distributor salesmen to develop a better understanding of dealer problems, and of methods by which wholesale salesmen can help their dealers increase financial capacities through fundamental selling and operating improvements.

abilities stands out in

New MARLEY *Series B DriCooler®

CONDENSERS

capability — **Tops in Heat Transfer:** Exclusive vertical, forced-draft design moves more pounds of air per cubic foot. Diagonally mounted coils form plenum that diffuses air over all coil surfaces. Entire coil area is functional—no "dead" spots, no recirculation.

adaptability — **23 models:** One will pin-point any job of 10 to 140 tons nominal capacity. Modular coils permit broad flexibilty for multi-circuit service. Vertical discharge means unrestricted choice of location regardless of wind direction or obstruction.

durability — **Rugged, Rigid Construction:** Coils and mechanical equipment are mounted on heavy welded and bolted truss-type steel frame—all hot dip galvanized. Support members are sturdy, broad angles that add materially to long vibration-free service.

compatability — **Appearance Is Plus Factor:** New design uses newest materials. Casing of embossed, corrugated aluminum panels, precision-fitted corner rolls and manifold covers combine with low over-all height to achieve effective harmony with modern structural design.

THE MARLEY COMPANY, KANSAS CITY 14, MISSOURI

*U. S. and Foreign Patents Pending

...and complete year 'round **controlability** *when equipped with* New Marley originated

ADB PRECOOLER*

that levels high dry bulb peaks and excessive pressures by adiabatically reducing incoming air temperature with no spray on coils. Permits economical selection of original equipment; adds capacity for increased or unanticipated condenser load. DriCooler-PreCooler combination efficiently converts water-cooled systems to air-cooled.

... *and*

DRICOOLER DAMPER CONTROL SYSTEM*

the simplest, most efficient method of maintaining uniform pressure during low dry bulb periods. Automatically controls single or multi-circuit services. No added refrigerant charge; no oversized receiver.

Get the complete story on Series B DriCoolers; learn the added utility and economy of these air-cooled condensers.

MAIL COUPON TODAY

The Marley Company
Kansas City 14, Missouri

☐ *Send me complete information on DriCoolers with year 'round control.*

Mr._____

Company_____

Address_____

Tecumseh Names Jack A. Swain to Los Angeles Post

TECUMSEH, Mich.—Appointment of Jack A. Swain as Tecumseh district manager in Los Angeles, effective June 15, has been announced by T. W. Rundell, vice president in charge of sales and engineering, Tecumseh Products Co.

Jack A. Swain

The Los Angeles office will be responsible for both manufacturer and wholesaler sales in California, Nevada, and Arizona. The office will be located at 306 Tejon Pl., P. O. Box 843, Palos Verdes Estates, Los Angeles.

Office Manager Bob Wotring, who also worked at the Tecumseh factory for many years, pointed out that they will have a direct TWX line to the factory and that the telephone is FRontier 5-0578.

In announcing the appointment, Rundell commented that Swain has had 13 years' experience with Tecumseh.

Swain attended the University of Missouri and later Washington university in St. Louis. After serving as a bombardier in the U. S. Air Force from 1943 to 1945 he joined the Tecumseh eastern district office in 1947. He has been associated with this office continuously since 1947 and now will have responsibility for the West Coast territory.

Swain is now in the territory getting acquainted and intends to move his wife and four children in the near future. He has been an active member of ASHRAE since 1949.

For 1,000 Sq. Ft. House

Indianapolis Utility Estimates Electric Heating At $150 to $170 Per Season

By Frank J. Versagi

INDIANAPOLIS—With over 1,600 whole house electric heat installations behind it, Indianapolis Power & Light is talking about "15-to-17 cents per square foot per season" heating costs. On a 1,000-sq. ft. house, say, the yearly heating bill would be $150 to $170, according to A. C. Keller, director of trade coordination.

Keller told the NEWS that electric heat buyers are informed that their first year's heating bill would be some 20% higher than normal.

"There are two reasons for this," he said. "First, the house is literally full of water—in plaster, slabs, and the like, and it takes a heating season to get the house dry. Second, people are forever fiddling with the thermostat the first year in a completely understandable desire to experiment with their new heat."

The 1,600 installations, chiefly baseboard, have mostly been made in the past three years since IP&L has aggressively gone after the market. The utility does not merchandise electric heat, but promotes it and offers whatever help is needed to close sales.

A utility engineer, for example, checks on the insulation going into houses which will have electric heat, and he will insist on correction if anything is amiss. At a recent builder's show, 25 house builders put 35 electrically heated homes on display.

IP&L offers a 1.5-cent rate on all consumption — except separately metered water heaters—over 300 kwh per month for the heating seasons, which the company defines as Oct. 1 through the end of May. The utility offers budget billing to its heating customers.

On the company's lines are also 69 residential and over 200 commercial heat pump installations, stated Keller. "Experience has generally been good—very good on commercial installations." Newest important heat pump job is the installation of 31 Westinghouse units, 5 and 7½ tons, in an 80,000-sq. ft. self-serve department store. The store has been open only a few weeks.

The electric utility is cautions about predicting sales of electric heat and heat pumps this year. The reason: for the first time in over 10 years, gas heating permits are available in Indianapolis—4,000 of them, according to one source. "It will be interesting to see what sort of competitive picture develops," is the comment from both sides.

Think Value
Know Value*
Sell Value
*Straight, narrow slots of CONTROL-A-FLAME GRID on Fraser-Johnston's new burners, hold a short, blue flame, confining it to the burner head. They eliminate popping, flashback and pilot outage. Their non-corrugated surface is lint free. Ignited by one pilot, the flames join at the cross-overs instead of jumping. VALUE: DECADES OF SILENT, TROUBLE FREE BURNING. Burners can be used with natural, liquified petroleum or manufactured gas.
Fraser-Johnston
1900 17th STREET, SAN FRANCISCO, CALIFORNIA
"OVER A QUARTER CENTURY OF LEADERSHIP"
Upflow Furnaces 65,000 to 250,000 BTU Hr. Input
Downflow Furnaces 65,000 to 250,000 BTU Hr. Input
Horizontal Furnaces 70,000 to 150,000 BTU Hr. Input
Matching Cooling Coils for easy add on All Furnaces
Air Cooled and Water Cooled Condensing Units
Heat Pumps & Air Conditioning Units self contained & remote
Air Handling Units

270 Window Units Included In Export Opportunities

WASHINGTON, D. C. — Export trade opportunities listed recently by the Business & Defense Services Administration, U. S. Dept. of Commerce, include bid requests for a total of 270 window-type air conditioners.

Buyer is the United States of America Operations, Mission to Indonesia, c/o American Embassy, Djakarta, Indonesia. Wanted are 1-hp., 7-amp., 9,700 B.t.u.h. capacity units.

Two invitations were listed: No. 203, for 185 units, No. 204, for 85 units. Bid deadline for both is June 20, 1960.

Detailed specifications may be obtained by writing to: Office of Small Business, International Cooperation Administration, Washington 25, D. C. Material may be called for in person at Room 1406, Continental building, 1012 14th St., N.W., Washington, D. C.

The BDSA also reported that a licensing agreement to manufacture compressors and condensers for commercial refrigerators is sought by Jesus P. Cabrera of Volta Engineering, Mabuhay Lumber Co., Cebu, Philippines.

In addition, Friedel Riefer oHG, wholesaler, sales agent, transport, and dredging service, 20 Dorfstrasse, Neuenschmidten, Krs. Gelnhausen, is interested in purchasing household refrigerators, freezers, and air conditioning equipment.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

More Points Developed at MCAA Panel on

Apartment House Air Conditioning

R. G. WERDEN, engineering consultant, explains how 17 different air conditioning systems were analyzed for the most economical use in apartment houses. He addresses an air conditioning and refrigeration panel discussion at MCAA annual convention in New York City.

NEW MCAA OFFICERS are: (l. to r.) Leon L. Munier, treasurer; Frank V. McBride, senior vice president; Joseph S. Kearney, president; and William P. Scott, Jr., outgoing president.

NEW YORK CITY—The air conditioning panel session at the recent Mechanical Contractors of America convention drew the close attention of a packed house of contractors and considerable discussion, over the description and explanation of 17 different projected methods of air conditioning a multistory apartment house by Robert Werden, Valley Engineering Co., firm of consultants in Glenside, Pa.

The main points in the comparison of the various systems, which included through-the-wall room units and heat pump systems in addition to fan coil and induction systems, with electric baseboard or hot water baseboard type heating to provide sufficient heating capacity, were covered in a story on the MCAA meeting published in the May 16 issue.

However, the discussion following the presentation developed some additional points both by the speaker, and from members contributing to the discussion from the floor. Among these:

In apartment house systems, where fresh air is not introduced to the individual apartments through a central system, sufficient ventilating air can be developed by pressurizing the corridors, if infiltration air is in the order of 25%, and there is provision for exhausting air from the kitchen and bathroom areas.

* * *

The fan coil type system which formed one of the 17 different types of systems described as a possibility for the apartment house project would use water at 105° F. with 0° F. outside design temperature. This water temperature could be lower if the internal heat gain is higher than normal, and if the insulating type glass is used in the construction.

* * *

In any consideration of owning and operating costs for air conditioning in a larger apartment house project, look beyond the straight quoted costs on electric power use. The base demand load for power for the entire apartment house electric use can serve to bring about a rate reduction under terms offered by many utilities.

In establishing owning and operating costs, in addition to actual power and fuel costs and maintenance charges, interest, taxes, and depreciation should be taken into consideration. In considering depreciation, the speaker said that for a broad general consideration a central system might be depreciated over a 20-year period, a unitary air conditioning system half that amount of time, and through-the-wall room units a little more than a third.

BLAST

SCALE... SLIME... SLUDGE...ALGAE

but SAVE the EQUIPMENT!

For Easier Work . . .
More Satisfied Customers . . .
DEMAND . . .

VAPCO SCALE REMOVER
The SAFE cleaner in powder form!

VAPCO-HIB
For those who "Make Their Own" cleaner!

VAPCO-PHOS NUGGETS
To keep cleaned jobs really clean!

VAPCO SLIME-X
To knock out algae and slime!

VAPCO Ice Machine Cleaner
Safe for all makes and models!

Complete literature on request or see your dealer—TODAY!

Vapco QUALITY PRODUCTS

Complete literature on request or see your dealer TODAY!

GARMAN COMPANY
ST. LOUIS 23, MO.

UCON IKE

Brings You a New, Friendly Refrigerant Service

Ucon Ike is the symbol of the *real* difference between refrigerants—*service!* He's a friendly fellow—Ucon Ike. A fresh new idea in service. The kind you get with UCON Brand Refrigerants—newest in the industry.

Only UCON Brand Refrigerants, for example, are backed by a written policy that makes doing business easier for wholesalers and contractors. It's a policy that works for you through friendly, competent, energetic people who know and care about your problems, and pledge to distribute only through wholesalers of air conditioning and refrigeration products.

Look for Ucon Ike when you want the best in service . . . and top-quality refrigerants.

UCON Refrigerants: 5 top-quality grades; full range of unit sizes; color-coded at the top; personalized service.

UCON Brand Refrigerants are manufactured by
UNION CARBIDE CHEMICALS COMPANY—Division of Union Carbide Corporation
30 East 42nd St., New York 17, N. Y.
Exclusive Sales Agent to Air Conditioning and Refrigeration Wholesalers
ANSUL CHEMICAL COMPANY, Marinette, Wisconsin

UCON and UNION CARBIDE are registered trade marks of Union Carbide Corporation

UNION CARBIDE product Ucon BRAND refrigerants exclusive sales agent ANSUL

Many Advertising, Sales Promotion Ideas Presented at 4-Day Airtemp Workshop

DAYTON — An advertising and sales promotion workshop for distributors staged by Chrysler Corp.'s Airtemp Div. here recently proved so successful that Airtemp is seriously considering holding more such sessions aimed at assisting distributors to solve their common problems.

"We were extremely gratified by your attendance and your enthusiasm at our first workshop and we will give some serious thought to future workshops," Vice President of Sales Joseph B. Ogden told the distributors and their employes. He hinted the next workshop might involve business management problems.

More than 70 persons attended the four-day workshop and represented Chrysler distributors from all over the country.

At the final session one of the distributors, acting as a spokesman for the group, thanked the Chrysler Airtemp advertising staff for arranging the workshop.

"We owe this staff a debt of gratitude for these stimulating, enlightening meetings and the informative speakers it provided. We all feel that the knowledge obtained at this workshop will serve us to better understand and use the various advertising means at our disposal," spokesman Benjamin D. Wiesman stated.

Wiesman is director of advertising and sales promotion in Omaha, Neb.

The workshop was planned and operated by Richard R. Routh, Jr., Airtemp advertising and sales promotion director, and Arthur Foster, advertising manager.

The arranged for the following speakers to address the distributors:

Irv Trachtenberg, group sales manager, Radio Advertising Bureau, New York City; Don H. Kemper, president of Don Kemper Advertising Agency, Dayton; Samuel Wasserman, vice president, James Gray, Inc., New York City; Lewis T. Beman, national advertising manager, *The Cincinnati Enquirer;* James C. Hirsch, director of national sales, Television Bureau of Advertising, Inc., New York City; and Allan Backman, executive vice president, National Better Business Bureau, New York City.

FOUR of the main speakers at Chrysler Airtemp's advertising and sales promotion workshop discuss the program with Richard R. Routh, Jr., Chrysler Airtemp advertising and sales promotion director, second on the left. From left to right are: Irv Trachtenberg, group sales manager, Radio Advertising Bureau, Inc., New York City; Routh; Lewis T. Beman, national advertising manager, *The Cincinnati Enquirer;* Samuel Wasserman, vice president, James Gray, Inc., New York City; and Don H. Kemper, president, Don Kemper Co., Inc., Dayton.

They spoke on such topics as the values of newspaper advertising; radio advertising; television advertising; advertising agency selection; cooperative advertising; direct mail; and effective displays and exhibits.

In addition to the national experts, Chrysler distributors were also on the program. They discussed successful advertising campaigns conducted by their distributorship, incentive programs, and display exhibits.

James Kelley, vice president, Bragg Conditioned Air Supply, Inc., Wichita, Kan., told "How We Conducted A Successful Pre-Season Newspaper Ad Program on Residential Air Conditioning."

Jacob G. Stockinger, sales manager, Apparatus Distributors, Inc., New York City, related "How We Used Direct Mail To Help Increase Commercial Air Conditioning Sales."

Arthur D. Bogen, president, Bogen, Inc., Columbus, Ohio, explained "How We Developed Prospects For Air Conditioning Through Radio Spot Advertising."

Using Local Advertising Agency

Wiesman reported on "How Sidles Company Successfully Employs The Services of a Local Advertising Agency."

Joe Cavataio, president, Refrigeration Supplies, Inc., St. Louis, gave "The Inside Story of Our Exhibit at the St. Louis Home Show."

Raymond H. Quiggin, president, Airtherm Supply Co., Cleveland, discussed "Effective Sales Incentive Programs We Have Used."

Howdy Shaffer, vice president, S. S. Fretz, Jr., Inc., Philadelphia, talked on "Integrity Dealers—Or Pins on the Map."

Routh said he was extremely pleased with the advertising and sales promotion workshop. "To my knowledge, this is only the second such workshop ever sponsored by an air conditioning manufacturer and the other one was held six or seven years ago," Routh stated.

"This workshop should eventually mean more than 10 million dollars worth of sales. Our distributors have been introduced to the latest methods and means of advertising and should be able to present their products in a manner which will increase their sales," he summed up.

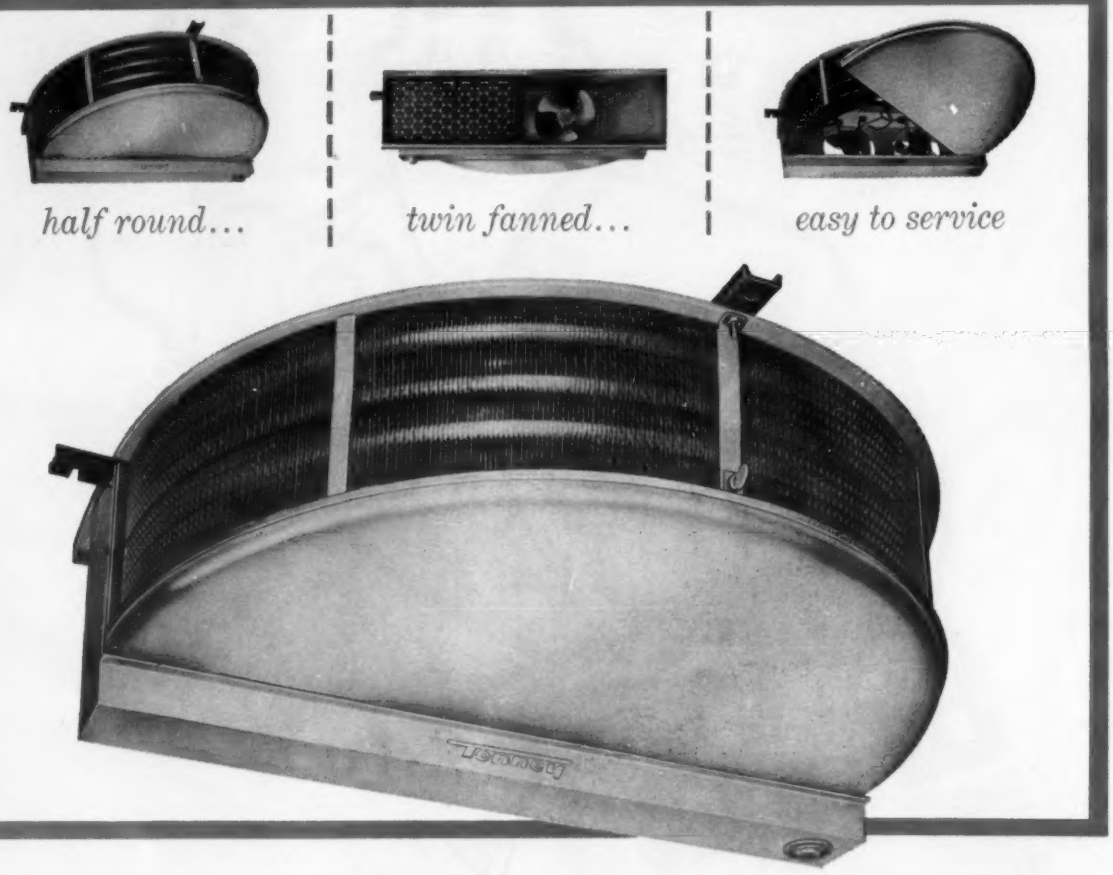
Pre-Season Newspaper Ad Campaign Described

Kelley spoke about a preseason newspaper ad campaign on residential air conditioning which his company used successfully in Wichita for its captive retail outlet.

The advertisements were used in February and March. Two newspapers were selected, the Sunday real estate section of one paper and the Friday evening section of the other.

The Sunday paper has the

TENNEY



Tenney TW and TWF unit coolers with ALL-ALUMINUM HOUSINGS!

More cooling power per square inch and most convenient installation with Tenney's TW and TWF unit coolers than with any other comparable units—*and now they're built of lightweight, rustproof aluminum.* True half round design insures maximum air distribution. It hugs up tight against the ceiling and its unique design allows maximum product storage. Service is so simple—flick off a thumb screw and the entire unit is open, with all parts within easy reach. You never disturb existing refrigeration, electrical or water drain lines! And in case of emergency, *one* of the unit's two fan-and-motor combinations can maintain safe temperatures until help arrives. Standard filters are optional on both units. Write for literature and technical data on these new all-aluminum TW and TWF unit coolers today.

Write for Bulletin 104-54

Engineers and Manufacturers of Refrigeration and Environmental Equipment

Tenney ENGINEERING, INC.

1090 SPRINGFIELD ROAD, UNION, NEW JERSEY • PLANTS: UNION, NEW JERSEY AND BALTIMORE, MARYLAND

greater circulation but the evening paper has many loyal readers. Many people take both papers. For maximum penetration both papers were used.

The Sunday real estate section was used, Kelley said, because:

1. It is strongly identified with Wichita home builders.
2. The company needed home builder "Exposure."
3. The paper is read by persons interested in home building, buying a new home, and home modernization.

The Sunday paper is read by "even non-regular readers" in an air of relaxation, he noted.

The Friday evening paper was chosen because Friday offers more leisure time. Because many men don't work Saturday, Kelley felt that the lady of the house, reading the ad on Friday, might show it to her husband and they would make plans to see about air conditioning the next day.

The ad was based on sincerity and a theme "Central air conditioning for your home." A 10% savings during February was offered to any purchaser and every prospect was offered a gift, a Taylor hygrometer.

Direct Mail Campaigns Must Be Well Planned And Complete

Stockinger stressed that any direct mail campaign to sell air conditioning must be complete.

Before rushing into such a campaign a dealer must plan on what market he wants to cover, do a complete, thorough job of covering this market, and develop the mailing piece tailored to that particular market, such as high income, restaurants, commercial, etc., he explained.

Stockinger stressed that the mailing piece must be directed at the level of the individual in the market.

He said Apparatus Distributors' first "tailored" direct mail campaign resulted in the sale of several hundred tons of air conditioning equipment.

Pointers on Looking For Ad Agency

Wiesman offered these points to distributors looking for an advertising agency.

1. Choose as carefully as you would a wife. You want to be wedded a long time.
2. Have a mutual trust.
3. Work as a team.
4. *Advertise* after you get an agency—put it to work.

He stressed that getting the right account executive was most important. He called him the key, and a priceless ingredient in the distributorship-agency relationship. The account executive must be a partner in your thinking, Wiesman stated.

One advantage of an agency is that it saves the distributor the time he would spend talking to media space representatives. Wiesman also stated that in his case, it brought 40 more people to bear on "my objectives as an advertising and sales promotion department."

He said an agency could help localize the manufacturer's material to the distributor's situation and objectives.

In summation, Wiesman called his agency, "the best value I'm getting in today's business world."

How To Plan Radio Advertising

Bogen said in radio advertising you should make definite plans on what you want to say and keep in mind these points.

1. Keep the material light.
2. Keep it factual but not boring.
3. Offer some advantages and benefits to your listeners.
4. Tell your listener what to do, how to buy, and who to see or where to inquire about your product.

Bogen said radio advertising had kept the company's name in front of the public. He doubted that any cab driver in Columbus wasn't aware of his business location.

Bogen offered these points in selecting a station and the time.

1. The station must have the power to cover your market.
2. It must offer good listening with your advertisement. Make sure the listeners are potential customers, not rock and rollers or children.
3. Check and compare the rates.
4. Buy spot commercials during the morning and evening rush hour driving times.
5. Cultivate the disc jockey doing your commercial and develop a warm relationship. Invite him to the plant and let him see the product and your business.

"I believe it is one of the best means of advertising for air conditioning businesses," Bogen said.

Cavataio stressed obtaining a large space in any exhibit. In the St. Louis home builders show his firm had entered the electrical division and saved a discount on rental costs.

He estimated that it cost two and one-half cents in the St. Louis home builders show to expose his products before 120,000 persons, although he admitted not everyone saw it. He said an attempt to reach that many people by mail would cost two or three times as much.

He recommended not bringing in dealers to man exhibits because they are interested only in customers in their own sales territories. Cavataio prefers to use his own distributor force.

His organization only took the names of people interested in his products or air conditioning. Taking everyone's name just wastes time, he believes.

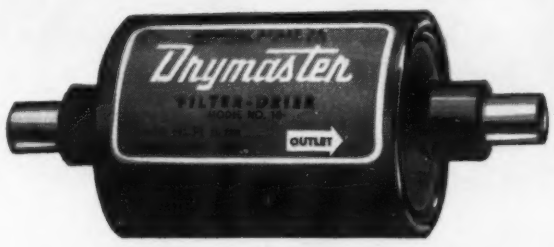
He recommended that salesmen point out features to the woman, as she may end up helping make the sale. He stressed refraining from any technical talk. For air conditioning, Cavataio tries to give an average cost per square foot to the customer, who then will have an

(Continued on next page)

AFTER EACH ADDRESS in the Chrysler Airtemp workshop, teams of 10 distributors and a moderator retired to a conference room to discuss advertising problems. Each team was changed at a different session to gain the maximum benefit of meeting different distributors.

it's the balance that counts . .

. . that's why Drymaster® with balanced drying and filtering is the best engineered filter-drier you can buy today!



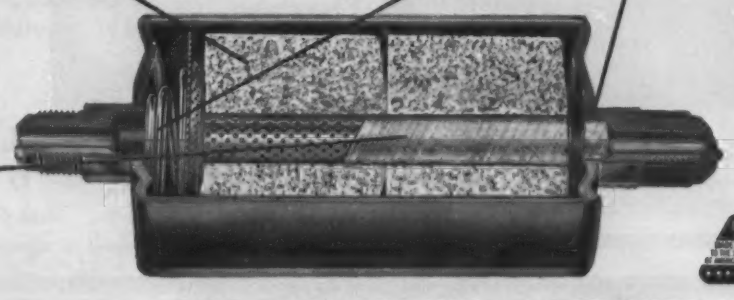
Drymaster Filter-Driers meet the most exacting needs of today's modern refrigeration system. Engineered and rated in every respect in accordance with ARI Standard 710-58, Drymaster does *both* filtering and drying perfectly . . . gives guaranteed balanced performance. To provide the versatility to meet the demands of every installation, Drymasters are available in a wide range of types, capacities and sizes with either male, female flare or copper solder-type end connections for easy installation . . . Drymasters are also available in combination with the Sightmaster Liquid Indicator.

Drymaster is engineered for today's modern refrigeration systems

HI-FI FILTER BLOCK DESICCANT—fully activated, pressure-molded briquette removes ALL moisture, acid, sludge and micron-size foreign particles. Unequalled in moisture absorbing capacity; surface and internal depth filtering is unsurpassed by comparable sized driers.

SHOCK-PROOF ASSEMBLY—Filter tube, alignment hub, conical spring and spacer at outlet end form cushion suspension for internal parts; heavy-welded body construction makes Drymaster Shock-Proof.

FILTER TUBE—perforated tube with monel screen makes a doubly effective safeguard against dirt and sludge.



For sizes, complete information and specification on Drymaster Filter-Driers, send for new bulletin. Just released.

273

MUELLER BRASS CO.
PORT HURON 13, MICHIGAN
VAMPCO ALUMINUM PRODUCTS, LTD., STRATHROY, ONTARIO
Exclusive Canadian Representative for Mueller Brass Co. Air Conditioning and Refrigeration Products.

Airtemp Workshop--

(Continued from preceding page)
idea of installation cost.

He didn't have live hook-ups on packaged equipment. But a room unit was set up for live demonstration. He sees no advantage in live demonstrations and their prohibitive costs.

Quiggan said incentive programs are not limited to sales, but to achieve any results.

He mentioned a program which proved successful in Cleveland on COD collections. They had been a problem.

Service teams from the East side and West side were pitted against each other. The team which collected the greatest amount of cash on a percentage call basis would get a free night at one of Cleveland's top supper clubs, with their wives. The wives were so notified.

The drive resulted in a 40% COD improvement. As a by-product, the night-out brought the office staff and servicemen to a much closer relationship.

Another successful effort was trying to sell furnaces and air conditioners in the winter. Wives of the salesmen were notified that the winner would get a free week in Florida.

The wives industriously mailed out cards from their homes to prospects, many wives addressing 50 to 100 per day.

Winning salesman sold five times his normal winter quota. He said he learned how to increase his dollar volume through the leads he contacted and sold.

Winning salesman's wife personally addressed 3,000 cards to prospects. There was a 2% response to the direct mail she sent out.

Calif. Licenses Fewer Refrigeration Contractors In '60

SACRAMENTO, Calif. — Report for the quarter ending March 31 showed 10 less refrigeration contractors licensed by the California contractor's state license board than for the fiscal year which ended June 30, 1959, when there was a total of 617.

On the other hand, in air conditioning there are 25 more warm air heating, ventilating, and air conditioning contractors licensed as of March 31 than there were for the fiscal year which ended June 30, 1959, when there were 964, according to the report.

Under California contractor classifications, air conditioning contractors work in a temperature field above 50° F.

California Contractors Pave Way For Journeyman Training In Sept.

SAN FRANCISCO — A preliminary program is under way which leads to refrigeration journeyman training starting in September.

The present activity is the start of the Certified journeyman plan which calls for a year of special training followed by an examination qualifying for premium pay, sponsored by the Refrigeration & Air Conditioning Contractors Association of Northern California, and United Association Local 38.

On April 23, refrigeration journeymen took journeymen evaluations which are an important guide to the Refrigeration Joint Conference Board, and indicate the training the men want.

Earlier, refrigeration journeymen and apprentices attended a meeting arranged by the training committee of the board. The Certified journeyman training plan was explained in detail.

The April 23 evaluations enable the board to plan for the number of students to be enrolled, for the type of instructors, and for type of classes.

A survey is being made by visitation of contractors so the board may learn what the contractors would like to have in the training program.

As provided by the new contract the Refrigeration Joint Conference Board has four contractors from RACCA, and four representatives of refrigeration journeymen in local 38.

Contractor members are: George Eskra, Ken Morris, Bob Mowat, and Jim Scatena. Union members are: Bill Mahoney, Al Lawson, Joe Mazzola, and Phil Doherty.

Officers of the board are: President George Eskra, Vice President Al Lawson, Treasurer Bob Mowat, and Secretary Bill Mahoney.

The board appointed Harry L. Bowe to be coordinator of the joint journeyman and apprentice training program. He will be in the Bay area as requested and required.

Frank McDermott, former business agent of local 38, was appointed assistant coordinator working full-time.

ARW Region 5 To View Marketing Trends

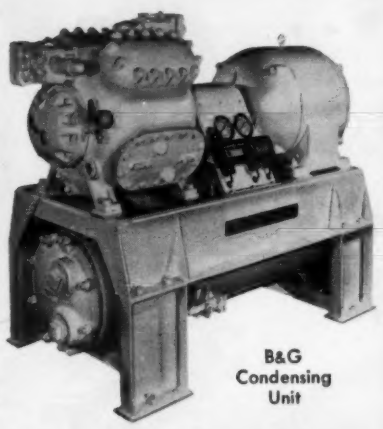
PORT HURON, Mich.—"Are you keeping up with your changing markets?" will be the theme at the business sessions of the meeting of Region 5 of Air Conditioning & Refrigeration Wholesalers (ARW) at Gratiot Inn here June 16-17-18.

The session on Thursday morning, June 16, will explore the subject of "What Are the Trends in Marketing Today . . . for manufacturers . . . for wholesalers . . . for the trade?" with James McCallum, Jr. of *Refrigeration & Air Conditioning Business,* Charles Horton of *Supply House Times,* and Phil Redeker of AIR CONDITIONING, HEATING & REFRIGERATION NEWS participating in a panel discussion with Thom Muir, ARW executive director, as moderator and group leader.

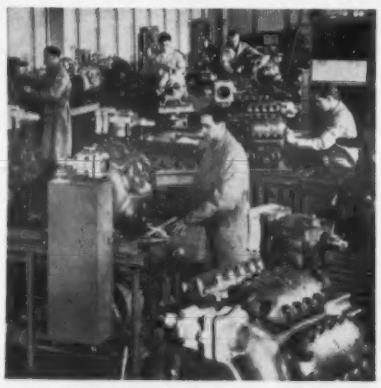
On Friday morning the wholesalers will hear from Henry F. Eaton, of Dix & Eaton, Cleveland advertising agency, on the program which the agency is developing to promote the interests of ARW. Speaking on "Meeting the Challenge of Market Changes" will be George C. Webster, Washington, D. C. management consultant who has had experience in the industry as retailer, distributor, and wholesaler.

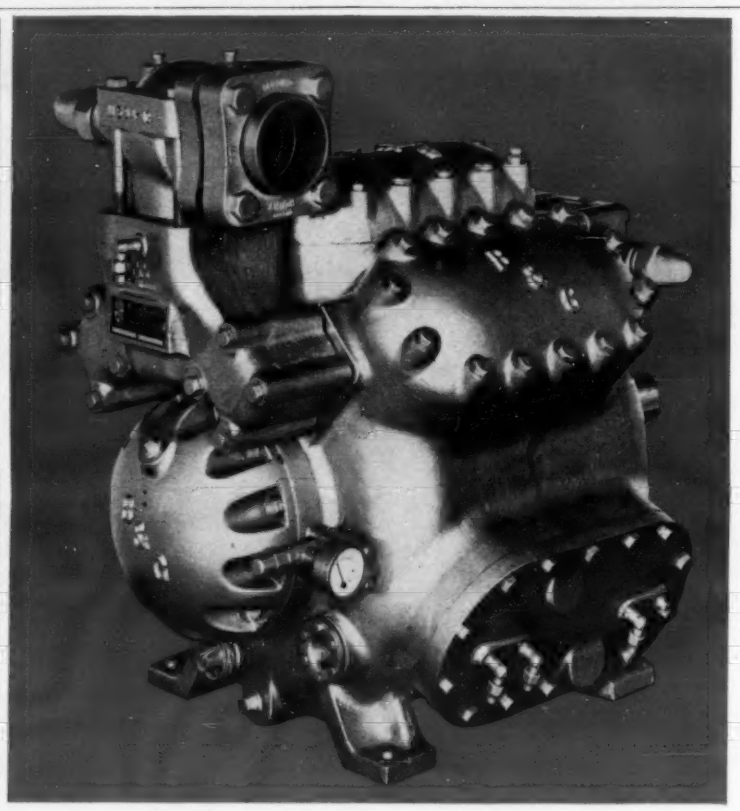
For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.


B&G Condensing Unit

B&G Package Liquid Cooler


All B&G Condensing Units and Package Liquid Coolers are equipped with B&G Compressors, shown here being assembled under controlled temperature and humidity conditions.



New Compressor better satisfies today's air conditioning requirements

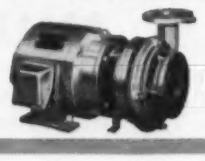
An essential requirement of air conditioning equipment is *quiet* operation. In the newly developed B&G Compressor, this characteristic is an outstanding feature. The Compressor is completely new in conception, engineered and built to establish higher standards of performance.

The amazing reduction in vibration and noise is concrete evidence of quality! It indicates precision manufacture of a basically superior design. B&G Compressors have fewer parts, present fewer maintenance problems. All units have *one* bore—a few interchangeable parts will service them all. All these things add up to a sound warranty of exceptional performance and long life.

BELL & GOSSETT COMPANY
Dept. GF47, Morton Grove, Illinois
Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

A COMPLETE LINE OF REFRIGERATION AND AIR CONDITIONING "PACKAGES" AND COMPONENTS

B&G Evaporator


B&G Centrifugal Pump

B&G Condenser

Cooling Industry Urges Stepped-Up Vocational Training

Educators Told That Trained People Are Vital to Expansion

NEW YORK CITY—Air conditioning industry representatives called for a stepped up vocational training program in refrigeration and air conditioning mechanics before a group of 50 vocational educators from the northeast.

Pointing out that the air conditioning industry in all its phases employs close to a quarter million people, William A. Lake, general sales manager of the Unitary Equipment Div. of Carrier Corp. said:

"One of the great problems in expansion has been and will be to find people to do the job."

Attending the first day of the North Atlantic Regional Conference on Trade and Industrial Education at the Hotel Sheraton-Atlantic were George S. Jones, managing director of Air-Conditioning & Refrigeration Institute; Arthur Meling, manager of technical services of the Unitary Equipment Div. of Carrier; and D. R. Meckstroth, manager of marketing, Westinghouse Electric Corp.

Undeveloped Markets Cited

Lake also sketched out the huge undeveloped markets for air conditioning—300,000 industrial plants, 1.3 million existing classrooms, and some 50 million households.

Meling showed examples of training films, recorded lectures, and booklets which are being used in the industry already.

The educators divided in two groups to discuss "How to Promote, Develop, and Organize Classes in Air Conditioning." One group, chairmanned by Edward L. Booth, chief of the Bureau of Occupational Extension and Industrial Services, New York State Education Department, considered the requirements for adult, apprentice, and extension programs.

The other group, led by Dr. Nelson J. Murbach, chief of the Bureau of Trade and Technical Education of the University of the State of New York, studied the steps that can be taken to initiate secondary school programs.

Educators Offer Suggestions

Following the meeting, Dr. Murbach recommended that the ARI enlist the cooperation of vocational educators and determine an approach to the entire problem that would have national application.

He suggested that the development of curriculum and materials be worked out with the U. S. Office of Education in Washington, D. C., and offered his aid in making this contact.

Dr. Murbach also suggested that ARI develop some guidance brochures which would spell out to adults and youths alike the opportunities in the air conditioning industry.

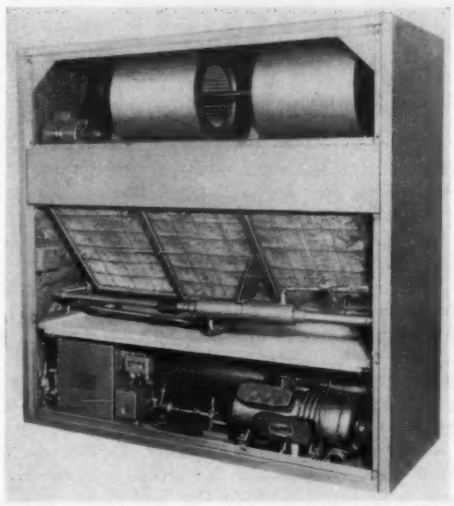
Dunham-Bush Bows Heavy-Duty Packaged Units

WEST HARTFORD, Conn.—Dunham-Bush, Inc. has introduced a new line of packaged air conditioners designed for use in such places as restaurants, stores, offices, clubs, banks, factories, and depots.

Ruggedly constructed for heavy-duty use. the "PAC" units are finished to harmonize with practically any decor and are engineered for installation either within the conditioned area or at a remote location, it was pointed out.

Casings are insulated throughout with one inch glass fiber and casings are of panel type construction, finished in hammertone blue-gray enamel with vinyl paint undercoating, the company indicated.

"Available in 10, 15, 20, 25, and 30-hp. capacities, 'PAC' units are compact, quiet in operation, and easily adapted (in the field) for connection to ductwork," it was stated.



CUTAWAY VIEW of new Dunham-Bush "PAC" packaged air conditioner.

"The 20, 25, and 30-hp. models are equipped with dual compressors. The 10 and 15-hp. models are available with free air discharge plenum and may be had with steam coils in the plenum.

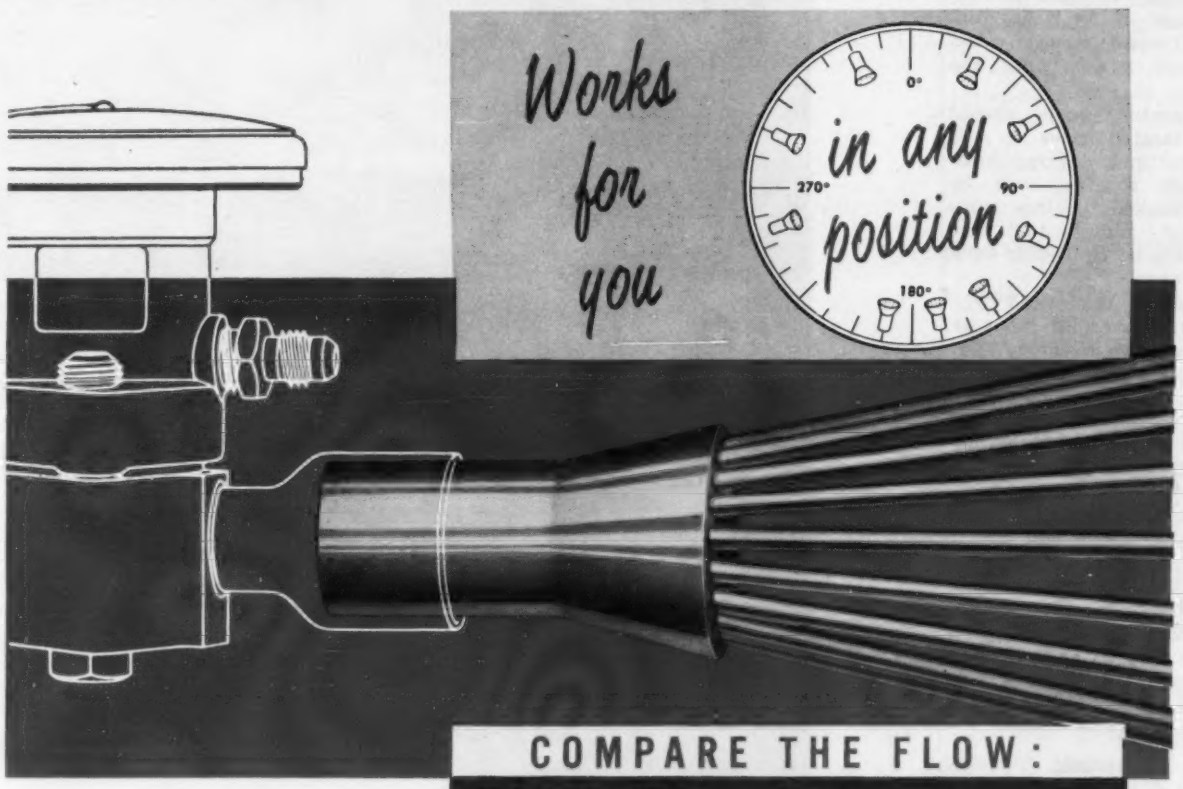
"All models can be used with steam coils in the duct system; all can be furnished with fresh air inlets. Superheaters and permanently lubricated ball bearings are standard on all models."

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

CHECK THE ADVANTAGES...THEN SPECIFY • INSTALL

ALCO'S NEW VENTURI-FLO® DISTRIBUTOR



Assures equal distribution to all passes of a multi-circuit evaporator with a low pressure drop.

WIDE APPLICATION RANGE—from 25% to 150% of Rated Capacity.

LOW PRESSURE DROP—permits closer, more economical Thermo® Valve sizing—assures more stable valve control.

ONE PIECE CONSTRUCTION—nothing to come apart, nothing to take apart—*No orifices, plates or nozzles needed* for capacity regulation.

COMPARE THE FLOW:

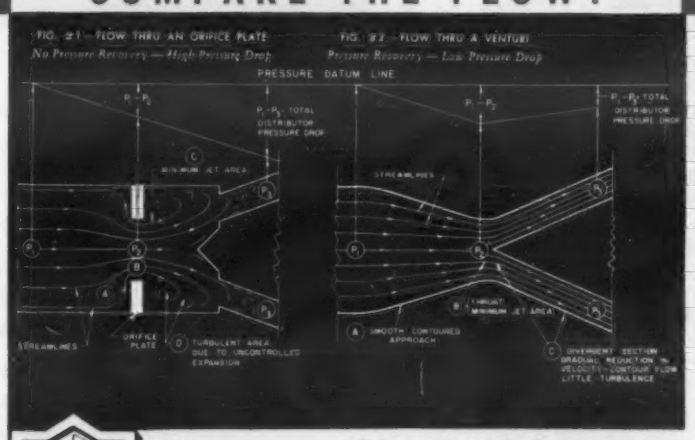


FIG. #1 — FLOW THRU AN ORIFICE PLATE
No Pressure Recovery — High Pressure Drop
FIG. #2 — FLOW THRU A VENTURI
Pressure Recovery — Low Pressure Drop
PRESSURE DATUM LINE
STREAMLINES
ORIFICE PLATE
SMOOTH CONTOURED APPROACH

Call your Alco wholesaler—write for Specifications Bulletin No. 188.57.

• *BUY SECURITY*
• *BUY QUALITY*
• *BUY ALCO*

8219

ALCO VALVE CO.
853 KINGSLAND AVE. • ST. LOUIS 5, MO.

The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

Heating Wholesaler Panel Airs Views on Perpetual Problem: Perpetual Inventory

NEW ORLEANS — Should wholesalers maintain a perpetual inventory system? If so, how elaborate need it be and how should it be set up?

Varying opinions on these questions were aired in a workshop panel session staged by Northamerican Heating & Airconditioning Wholesalers Association during its recent spring convention here.

Some sort of perpetual inventory is needed, the panelists agreed, but they generally indicated the system should not be allowed to become too elaborate.

Loose-Leaf Inventory Books Facilitate Storage In Vault

For example, loose-leaf books for inventory records are preferred by E. E. Souther Iron Co. of St. Louis, explained Lee J. Haines.

"Such books can be placed in a fireproof vault overnight, and these records will prove your loss in case of fire," he said. "You can't easily move a wheel type record system into the vault."

The inventory books should also be located close to the order department during business hours so they can be readily checked, Haines also pointed out, adding, too, that daily posting is required to keep them current.

Questioning the need for close control over all items in a wholesaler's inventory, W. Evert Welch of Minneapolis-Honeywell, the moderator, gave a dramatic demonstration of his point by unrolling down the center aisle a 165-ft. long tabulation of 5,000 items representing an annual gross of $2 million.

"The first 5 ft., or in other words 2% to 3% of the items, account for 50% of your annual business," Welch declared. "So I feel we should keep close control over that 2% to 3% of the items and pay less attention to all the other items."

When Is Automatic Control System Justified?

Whether an automatic control system can be justified for perpetual inventory purposes of a wholesaler was discussed by George T. Wood of International Business Machines, who indicated that a machine system used for inventory control only would require a gross annual business of $3 to $5 million.

"But with a punch-card system you can do many other things as well, so it can be profitable for firms with a minimum annual gross of $500,000 to $2 million," the speaker contended.

"It will take three years and money to build up the system properly, however," he cautioned, also emphasizing that whatever system is used, it must return a profit.

When the logical question of how much it costs to maintain a manual type of perpetual inventory was raised, the answers ranged from $5,000 to $8,000 a year, this being an individual's salary.

"Any fool can look at a bin and see that it's empty, but he can't tell without records how much went through the bin," commented Ralph B. Bell of Richmond Supply Corp., Richmond, Ind.

In a more formal discussion Bell called attention to his conviction that "high turnover means nothing in itself. Rapid stock turn doesn't necessarily give the true profit picture," he declared.

In this connection Bell cited his firm's experience with a line of malleable iron fittings which he formerly ordered on an overnight basis from one of his suppliers.

"During 1958 we had 100 purchase orders on this supplier, but we were often out of items, however," Bell recalled. "Finally because of this we lost a big customer we had been cultivating."

The following year Bell's firm placed four orders for 40,000 lbs. each.

Instead of a cost of $3,540 for maintaining an inventory with 100 orders, the four orders represented an annual inventory cost of only $1,340, Bell calculated, and this saving did not include the additional price advantage for quantity purchases, he emphasized.

Reading Tube and Progress Mfg. In Midst of Merger Negotiations

NEW YORK CITY — Plans for a proposed merger of Reading Tube Corp. and Progress Mfg. Co., Inc. were announced recently by Martin Mack, Reading Tube president. Terms include an exchange of stock.

Mack said legal steps had to be taken before a formal merger proposal could be acted upon. If the transaction is consummated, he stated, Progress would be the surviving company, with Reading Tube a division.

Reading Tube and subsidiaries make copper and brass tubing for use in refrigeration, heating, plumbing, construction, and allied fields, and also other products.

Progress Mfg., with subsidiaries, is a diversified manufacturer of lighting fixtures, outdoor garden fixtures, door chimes, ventilating fans, bathroom cabinets, and radio intercommunication systems. The firm operates several plants.

Under the proposed merger terms, one share of Reading Tube common would be exchanged for six-tenths of a share of Progress common.

Roberts-Gordon Names Straw

BUFFALO—Henry K. Straw has been elected vice president in charge of sales of Roberts-Gordon Appliance Corp., manufacturer of gas heating equipment and central air conditioners.

HAVE YOU SEEN WHAT TECUMSEH'S DOING

Nobody disputes the fact that the Tecumseh name has been prominent throughout the history of modern refrigeration and air conditioning. More than forty million Tecumseh compressors are currently in service around the world. Their extremely low percentage of field failures is proof of their dependable performance. While it is true that this record has been established largely outside the commercial refrigeration market, it is also true that the same dependability, the same design improvements, and the same production efficiencies, are in every instance incorporated into the Tecumseh commercial product line. These compressors and condensing units now meet all popular requirements.

York Cooling Ads Urge 'Turn Your Home Into A Pleasure Island'

YORK, Pa. — "Turn Your Home Into A Pleasure Island" is the suggestion of a new summer-long promotion of central air conditioners by York Div. of Borg-Warner Corp.

Todd L. Owens, manager of advertising and sales promotion, said that the promotion will tie-in with the company's national advertising program for 1960 and will enable York dealers to reap the full benefit at the local level.

"York will run full-page newspaper ads in key markets across the country explaining how whole-house air conditioning can make a 'pleasure island' out of every home in a desert of summer heat," it was pointed out.

"In return for the opportunity to make a free home survey, local York dealers will give homeowners a free temperature-humidity gauge.

"Dealer kits will include direct mail pieces, full-color store banners, point-of-sale materials, T-H gauges, and a factory-prepared plan sheet telling dealers how to stage the promotion."

Named Service Depot

PHILADELPHIA—Allied Refrigeration Co. here announced that it has been appointed the factory-authorized service depot for in-warranty repairs on Emerson Electric window air conditioners and dehumidifiers in this area.

Arlene Francis Plugs Heating In Florida

TELEVISION STAR Arlene Francis, on hand to officially open 373-home project under construction by Oakland Consolidated Corp. just outside Orlando, Fla., poses with Harry Hagle of Hagle, Inc., Central Florida distributor for International Heater Co., whose furnaces are to be installed. Hagle pointed out that all models feature central heat with insulated duct to all rooms, yet selling price is only $8,250. Furnace supplied is 75,000 B.t.u.h. capacity.

Shreveport Group Shows Interest In Silver Shield

SHREVEPORT, La. — James D. Nolan, assistant director of public relations for the National Warm Air Heating & Air Conditioning Association with headquarters at Cleveland, was in Shreveport recently to speak to a dinner meeting of the Shreveport Association of Residential Heating & Air Conditioning Contractors (SARAH) at Pedro's Restaurant.

Nolan told the local association how the Silver Shield Program is attracting national attention as local heating and air conditioning contractors band together to give more indoor comfort to homeowners through upgrading systems of design and installation.

Tom Harper, president of the local group, stated that it appears that Shreveport will be the first city in Louisiana to inaugurate a Silver Shield program.

He also stated that SARAH has made arrangements to hold a general meeting in the near future to hear an executive engineer of NWAHACA explain technical standards and special industry training schools necessary to establish a local Silver Shield guaranteed indoor comfort bureau.

Kuppe Manages Trane Residential Sales

LA CROSSE, Wis.—James E. Kuppe has joined The Trane Co. as manager of residential "Climate Changer" sales, Trane Vice President A. C. Menke announced.

J. E. Kuppe

Trane Residential Climate Changers are central units that can include both cooling and heating equipment.

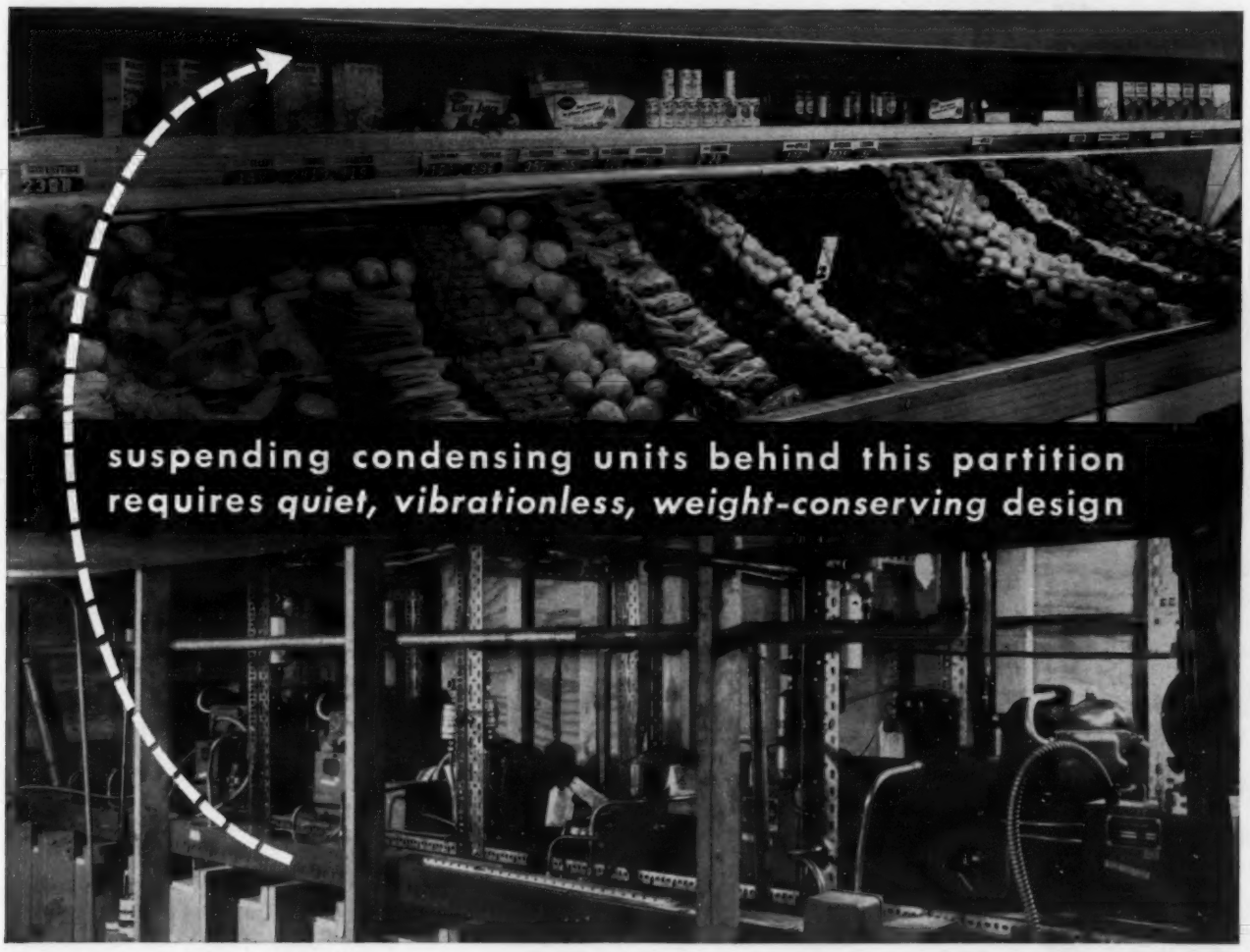
Kuppe attended Purdue university and Marquette university, where he received his mechanical engineering degree in 1948.

NWAHACA Drafts Model Heating, Cooling Code

CLEVELAND—A model code containing standards of design and installation for ducted heating and cooling systems installed in homes or small commercial buildings is being developed by the Codes and Standards Committee, Marketing Council of the National Warm Air Heating & Air Conditioning Association.

Meetings on the model code have been held for the past several months. The draft document, numbering over 5,000 words, is now going through its second reading by the committee.

Also, the group is reviewing comments on the code by numerous industry representatives that have made careful review of the draft document.



IN COMMERCIAL REFRIGERATION THESE DAYS?

Typical of the installation flexibility possible with Tecumseh, the water cooled units pictured above have been mounted directly over a 12-foot produce case. This positioning alone points up three major design advantages; *ultra-quiet* . . . necessary in being located so close to customer traffic below, *vibration-free* . . . to prevent "chatter" transmission to the non-supporting partition built around the units, and *low weight factor* . . . permitting the units to be suspended from the ceiling. Along with conserving floor space in the installation of remote condensing units, the operating efficiency of these Tecumseh hermetics is second to none. These five units—ranging in size from ¾ to 3 H.P.—have supplied the varying refrigeration requirements for the produce case mentioned, a 3-door upright ice cream cabinet, an 11-door upright frozen food cabinet, an 8-door upright beverage case, and a 30′ open air curtain case . . . *without a single service call required.* Consult your local contractor or Tecumseh wholesaler for complete information on the entire *new* Tecumseh commercial line.

forty million compressors in the field

TECUMSEH PRODUCTS COMPANY

MARION, OHIO
TECUMSEH, MICHIGAN

FOREIGN OPERATIONS DIVISION: Tecumseh, Michigan

CANADA: Tecumseh Products of Canada, Limited, 1667 Dundas St., London, Ont.

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

will aid them in overcoming the pitfalls of excessive inventory and obsolescence.

A word to the wise. . . .

Add Newspaper Boners

Together we can publicly display our trade union beliefs, and emphasize the spiritual values in which our labor movement is so firmly rotted.—*Los Angeles Citizen.*

The Chinese could, according to present arrangements, go into debt to Russia for as much as 300,000,000 rules. — *Duluth News-Tribune.*

Couple Goes to Party, Comes Home With Baby.—*Flint Journal.*

Walking John Rests In Hotel. —*Hamilton* (Ohio) *Journal.*

(To which latter "typo" could be appended: this will be good news for all conventioneers who return snarfulled to their rooms in the wee hours.)

Out of Our Mailbag

Price Refrigeration Co.
Tyler, Carrier, York,
Frigidaire Products
Williston, N. D.

Dear "Dope":

I do not suppose you remember me, but I met you at a Tyler sales meeting at South Bend, Ind.

I thought maybe AIR CONDITIONING & REFRIGERATION NEWS would be interested to know that we have sold and are now installing the first Heat Pump System in the State of North Dakota.

These two heat pumps are Carrier, and will be placed on the outside of an office building.

They will use auxiliary electric heaters in the ducts to help when the temperature gets down below zero. Heat and cooling will be sent through the office building by perimeter supply ducts installed in the floor. Return air will be taken back to air handling units near the ceiling. This will be a two zone system.

These Carrier heat pumps are being installed in the new Williams Electric Office building (REA) at Williston North Dakota. Leslie Blake was the architect for this building. S. A. Forseth is the manager of the Williams Electric Co-op, Inc.

I would appreciate it very much if you would put this item in your AIR CONDITIONING & REFRIGERATION NEWS.

BOB PRICE

Note: I see you have a Robert M. Price with AIR CONDITIONING & REFRIGERATION NEWS. My name is Robert M. Price, also.

Air Conditioned Pupils

In Owensboro, Ky., the new Daviess County high school includes:

Air conditioning in all 90 rooms, a 1,000 seat auditorium with upholstered seats, a hat check room, a patio, big mirrors in the hallways, a complete laundering service in the athletic department, parking lot for 750 cars, and acoustical ceilings and walls.

That air conditioning part of this deal is an excellent idea.

Add Definitions

Our definition of disillusionment is finding a corn pad when drinking champagne from a slipper.—D. O. FLYNN.

Troubles in marriage often begin when a man is so busy earning his salt that he forgets his sugar.—CY N. PEACE.

Quotes of the Week

Watch a man with scrutiny when his will is crossed, and his desires disappointed. The quality of spirit he reveals at a time like that will determine the character of that man.—DR. R. T. WILLIAMS.

The new leader is clearly distinguished from the old-style boss. A boss creates fear—a leader confidence. A boss fixes blame—a leader corrects mistakes. A boss knows it all—a leader asks questions. A boss makes work drudgery—a leader makes it interesting. A boss is interested in himself—a leader in his employes.—RUSSELL H. EWING.

Economics is the study of how limited resources can be best made to serve the unlimited wants of human beings.—HAIG BABIAN, *New York University.*

A man begins to feel his age when he realizes the girl looking his way is giving the once over to his son.

Good will is the one asset which no competitor can undersell or destroy.

Many's the wife who excavates her own matrimonial grave with a continuing series of little digs.

Prejudice is a great timesaver. You can form opinions without having to get the facts. — *Wisconsin Journal of Education.*

American enterprise is the art of making toeless shoes a fashion rather than a calamity. —*Flame Magazine (published in Holland).*

It is said that while Leonardo da Vinci was creating "The Last Supper," he would stand for two hours or more, just looking at his work. He would view it from different perspectives, in different lights. He would carry the unfinished painting in his mind, letting his subconscious work on it, while he was away from it. Often the master painter would rush through the streets, mount the scaffold, all for just a touch or two, and rush away again. But each touch was the touch of genius. — *Highways of Happiness.*

Marriages were up last year; so were divorces. We're not showing much profit, but the volume is terrific. — BILL VAUGHAN.

Curtis cools

RETAIL STORES & SUPERMARKETS
INDUSTRIAL PLANTS & HOSPITALS
OFFICE & APARTMENT BUILDINGS
HOTELS & MOTELS
BANKS & CHURCHES
etc.
EVEN TOWBOATS
with
Packaged Air Cooled Conditioning Units 3 thru 10 Tons
Packaged Air Conditioning Units 3 thru 60 Tons
Packaged Liquid Chillers 7½ thru 125 Tons
Matching Evaporative Condensers, Cooling Towers and Air Handling Units
Condensing Units 3 thru 100 Tons

And in all applications—Curtis units perform dependably, always up to and frequently surpassing rated capacity. Key thing to remember is this... Curtis manufactures a complete line of units ideally suited to any application your customers are bidding on. You can depend on Curtis for high quality equipment with dependable performance. And a steady national advertising campaign developed around well known prestige installations helps pre-sell your customers. Your profit on Curtis is substantial, and your customers like the minimum service needed.

THE COMPLETE LINE OF LIQUID CHILLERS • PACKAGED AIR CONDITIONERS • CONDENSING UNITS

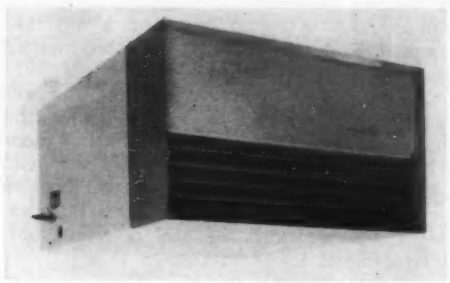
Curtis *Established 1854*

MANUFACTURING COMPANY • REFRIGERATION DIVISION • *Dept. 1, St. Louis 33, Missouri*

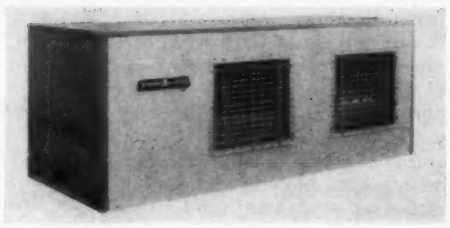
REMCOR Model CB-2A

WATER COOLER
5 Gallon Bottle Type
$89.50*
*TO DEALERS ONLY
. . . economical . . . efficient . . . streamlined . . . space-saving . . . ⅓ H.P. Tecumseh hermetic unit . . . five year warranty on refrigeration cycle . . .
Remcor Products Co.
321 E. Grand Avenue,
Chicago 11, Illinois
manufacturers of water coolers since 1948
also available:
pressure type coolers * $130.50
bottle type coolers (with refrigerated storage compartment)

G-E Expands Its Split System Line With New 6-Ton Air Conditioner



HORIZONTAL air handler has filters easily accessible from either side.



OUTDOOR condensing unit has high speed compressor, belt-driven blowers.

TYLER, Texas—Introduction of a new 6-ton split-system air conditioner has been announced by C. B. Ramsdell, marketing manager for General Electric Co.'s Central Air Conditioners.

This new member of the G-E air conditioner line includes a weatherized outdoor remote unit, model TA75B3, and an indoor air handling unit, model TE72BH. Like other members of the G-E line, it is U.L. approved, and rated in accordance with ARI Standards, it was stated.

"Heart of the outdoor section is the G-E high-speed compressor (3,450 r.p.m.)," the announcement said. "Features include belt-driven, permanently lubricated ball-bearing blowers, which allow easy airflow adjustment and quiet operation; and easy-access controls with 'straight-in' accessability for easier field wiring and maintenance.

"The fan is isolated from the compressor by a baffle, permitting fast, easy servicing without time consuming removal and replacement of exterior panels. This feature also cuts airborne compressor noise to a minimum.

"The outdoor section is shipped with a holding charge of R-22, and has built-in service valves bolted rigidly to the base to minimize installation and service delays. The manual reset switch is readily accessible without removal of any exterior panels.

"The companion air-handler unit is finished in two-tone grey enamel, and its permanently lubricated ball-bearing blowers are belt-driven by a four-pole, cushion mounted blower for quietness. A fan relay is furnished as standard equipment. Another feature is provided by filters easily accessible from either side of the unit. An air distributor is also provided as an accessory for in-space applications."

Concurrent with the announcement of this air conditioner, Ramsdell reaffirmed G-E's warranty policy. The warranty for the new 6-ton unit will correspond with the warranty adopted by G-E with the introduction of its 4 and 5-ton air conditioners and Weathertron heat pumps last fall.

It provides protection to the end-user through a standard one-year coverage on the entire air conditioner, plus a four-year warranty on the compressor alone, according to G-E. "No replacement labor allowance is included," Ramsdell stressed in his announcement.

Mueller Climatrol Employes See Worthington Meeting on Film

MILWAUKEE — Mueller Climatrol Div. employes saw and heard the second annual world-wide Worthington stockholders' meeting via sound films.

Motion pictures, slides, and recordings were made during the actual meeting held in New Jersey on April 21. Sound films and slides were duplicated and distributed to Mueller Climatrol in Milwaukee and to 42 other Worthington offices and plants in the United States and abroad.

"The distinctive Worthington pattern of world-wide meetings stems from its management conviction that employes, as well as stockholders, should be completely acquainted with all significant details concerned with the company operation," said Hobart C. Ramsey, Worthington's chairman.

Walther H. Feldmann, president of Worthington, reported on corporation modernization programs to keep pace with the '60's. Ramsey observed that Worthington has been established abroad for many years and as a result now does much business overseas involving interchangeable parts.

Following the Worthington films, Mueller Climatrol department heads and executives discussed the local plans and programs for the '60's.

The first annual world-wide meeting was "broadcast" over regular telephone wires. This, the second meeting, offered advantages of sight and sound.

Handy Tube Bender

Smoothly Bends any pipe or Tubing ⅜"-1⅛" O. D.

• Just a twist of the wrist assures perfect, even bends — right angle, any angle, U and offset. Save enough on ONE job to pay for your HANDY BENDER.

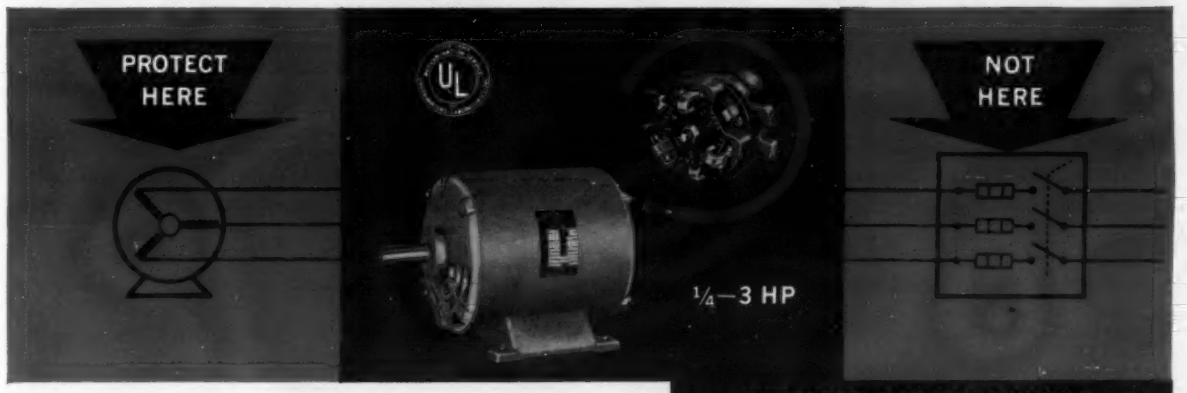
See your supply house—or write for free folder today.

HOLSCLAW BROS., INC.

428 N. Willow Road • Evansville, Indiana

BIG NEWS!
Now you can STOP 3-PHASE MOTOR BURNOUTS

Right where they start: INSIDE THE MOTOR



K-C INHERENT-PROTECTED OPEN MOTORS

. . . U/L approved for 67 types, 1/4 to 3 HP

Now you can prevent costly machinery downtime caused by 3-phase motor burnouts . . . and cut installation costs at the same time. Get your motor protection built-in, tested, U/L approved . . . at the factory!

GUARDS PERFORMANCE—The Inherent Protected Motor is completely self-protected against the very conditions that, up till now, have caused most 3-phase motor failures. And, it's tamper-proof!

CUTS COSTS—Overload current relays and 3-pole magnetic contactors in the motor starter can be eliminated. And, this motor is just as easy to install as ordinary designs.

Your Howell representative will be glad to give you complete information.

HOWELL Red Band MOTORS

HOWELL
electric motors company
THE KINGSTON-CONLEY DIVISION
PLAINFIELD, NEW JERSEY

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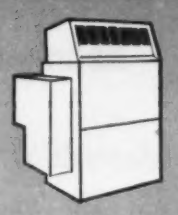
PROTECTS MOTORS DRIVING:



- Fans
- Blowers
- Compressors
- Air conditioning units
- Pumps
- Machine tools
- Conveyors
- All 3-phase applications—¼-3 hp.

AGAINST these conditions:

- Heavy overloads
- Stalling
- Single phasing
- Unbalanced voltage
- Failure to start
- Motor ventilation obstruction
- High ambient temperatures
- Plugging or reversing duty

SAMPLE MOTORS IN TWO WEEKS

Sample motors within the range of U/L approval, can be supplied in approximately two weeks. Approval covers 3-phase motors, ⅛ through 3 horsepower. Send specification details with your request.

Wholesaler Who Did Tells

Problems and Advantages of Merging Refrigeration and Heating Businesses

By George M. Hanning

GRAND RAPIDS, Mich. — Mergers, like marriages, always seem to be a good idea at the time.

But, like marriages, the obvious glittering advantages bring with them problems of adjustment.

The advantages are to be enjoyed. But the problems, whether foreseen or not, tax the ingenuity of the principals. Seeking solutions force the entire organization to work harder than before to make the new venture succeed.

That has been the experience of Heating and Cooling Wholesalers, confesses Ila H. Unseld, vice president of the merger-born firm.

In a small way, Heating and Cooling Wholesalers manifests an industry trend—the coming together of the warm air heating and the refrigeration industries.

Recognition of this trend several years ago was the primary cause of the merger, Mrs. Unseld noted.

The company was formed about a year and a half ago out of the Harris Supply Co., a refrigeration parts and supplies wholesaler, and Michigan Automatic Heating & Equipment Co., a warm air heating and air conditioning parts wholesaler.

Harris Supply was operated by Mrs. Unseld and her brother Clarence under the guidance of their father and founder of the firm, B. F. Harris.

Founded in 1937 in Holland, Mich., it had headquarters in Grand Rapids and branches in Kalamazoo and Lansing.

Michigan Automatic Heating Equipment Co. was formed by Robert H. Swart and Fay B. Bachelder in March, 1946. It headquartered in Grand Rapids with Swart its only active principal. The company experienced a rapid growth limited only by its small net worth.

In April, 1952, Swart decided to add a stockholder who would also be active in the operations of the company. At that time F. J. DePauw became a stockholder and sales manager. A branch warehouse with complete inventory of heating supplies was opened in Flint, in August, 1954.

Both Harris Supply and Michigan Automatic Heating were established, profitable firms in their own fields. But the principals of both were convinced that the time had come to ride the wave of the future and cast their fortunes together.

They estimate that about one third of their customers were selling both heating and air conditioning equipment and about 5 to 10% did both heating and refrigeration work. Grand Rapids licensing requirements hinder the combination of the two trades here, Mrs. Unseld believes.

After a year and a half experience, how has the merger worked out?

"We have made a lot of adjustments in the past 18 months that have cut into profits," commented Mrs. Unseld. "But now, as the men become more familiar with their new roles, we shall see how it works out. It looks as though it will."

Swart added, "While we have had some difficulty in knitting the two firms together, we are confident that out of this merger a strong wholesale service organization serving the heating, air conditioning, and refrigeration field has resulted.

"The first results are actually now being felt with every month of 1960 reflecting a larger volume than the same month of the previous year. We look forward with confidence to the future."

6 Benefits of Merger

What benefits has Heating and Cooling Wholesalers derived from the merger? And what adjustments had to be made?

After some thought, Mrs. Unseld ticked off six benefits realized by the consolidation.

First, she said, as both firms already handled them, the new company inherited high quality lines of products. They would have been nearly impossible to acquire independently, even over a number of years, if either firm had attempted to invade the other field on its own, she believes.

Second, the merger gave customers of both firms a single convenient source of supply for both their cooling and heating needs, providing extra volume for the new organization.

Third, by offering both heating and cooling equipment at all branches, territorial distribution of both firms was broadened.

Fourth, the merger made possible more economical use of personnel. Without adding new people, the sales force was strengthened. Now, each salesman sells both cooling and heating items to accounts. This eliminates the need for two men to cover the same territory. It also permits consolidation of territories to give more intensive coverage.

Able To Shift Counterman To Sales

"We were able to shift a counterman to sales to give us added strength in a particular area where we needed him," Mrs. Unseld related. "We shifted a heating man from the Flint branch to the Lansing branch and moved a refrigeration man to Flint."

Fifth, as both firms were headquartered in Grand Rapids, the merger eliminated the need for two stores. All operations were moved to the former headquarters of Michigan Automatic Heating & Equipment at 1575 S. Division Ave., reducing overhead considerably.

Last, but not least, centralized purchasing enabled the firm to buy in larger quantities and qualify for better discounts.

On the other hand, the

A typical application for the AM-4 is new "flat-back" refrigerators, where quiet, maintenance-free motors are required.

ACTUAL SIZE

Redmond AM-4 Is Designed Specifically for Refrigeration and Air Conditioning Industries

Adaptable Wherever a Long-Life, Permanently Lubricated, All-Angle Motor Is Needed

The AM-4 MicroMotor is designed and constructed to be the finest refrigeration condenser-fan motor available. It is the only motor of this type that is backed with a full two-year warranty. The AM-4 never needs oiling—an extra large quantity of lubricant is completely suspended and uniformly distributed in pure wool and nylon wicks, and permanently sealed to guarantee against oil leakage in use or shipment.

Although designed specifically for the refrigeration and air conditioning industries, the AM-4 single-bearing MicroMotor is ideally suited for other heavy-duty domestic and commercial applications where quality, long life, and permanent lubrication are important.

Write, wire, or telephone either the Redmond office nearest you, or the home office, and our sales engineers will help you adapt the AM-4 to your motor needs.

Your Nearest Redmond Engineering Field Office Has Complete Information for You

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Phone: Saratoga 5-5151

Eastern Office
850 Broad Street
Newark 5, New Jersey
Phone: Mitchell 2-3990

Southeast Office
1720 Section Road
Cincinnati 37, Ohio
Phone: Melrose 1-3153

Mid-West Office
Fair Oaks Bldg.
6525 W. North Ave.
Oak Park, Illinois
Phone: Village 8-5721

Southwest Office
5531 Dyer St.
Room 210 Dyer Bldg.
Dallas 6, Texas
Phone: Emerson 8-4461

Western Office
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FREE BROCHURE

For the complete story on the AM-4 motor—dimensions, performance, operational data, and suggested applications—write the Redmond Co., Owosso, Michigan for the "AM-4 Bulletin."

ADVERTISED IN The Saturday Evening POST

The Standard of Dependability

CC Redmond COMPANY, Inc.

Subsidiary of CONTROLS COMPANY of AMERICA

OWOSSO, MICHIGAN

THE BIG NAME IN SMALL MOTORS

REDMOND

merger brought with it the need for three major adjustments. They are still working themselves out, according to Mrs. Unseld.

First, uniting the two firms made one large business out of two small ones. In a small business, Mrs. Unseld noted, the principles are familiar with all phases of activity — counter, purchasing, credit, branches, etc. They knew everything that was going on.

But in a larger business, the volume of work forces the principals to divide up executive responsibilities and departmentalize. As a result, individuals soon found themselves losing touch with the business as a whole.

Despite regular meetings, they found that they had to ask for information they used to have at their finger tips.

Again, when it came to assigning departmental responsibilities, they had to feel their way to get the best person for the particular job.

At present, Swart, president of the firm, acts as general manager and head of the accounting department. DePauw is vice president and sales manager. Mrs. Unseld is vice president and director of purchases and branches. Harris is vice president and heads the credit department, counter, and warehouses.

"These responsibilities have been altered in the past and we are still shifting them to get the right combination," Mrs. Unseld declared.

In addition to the principals, the 34-man organization includes three branch managers, nine salesmen, one engineer, four countermen, seven warehousemen and truck drivers, three bookkeepers, and three clerical employes.

Men Must Learn about Unfamiliar Equipment

Second major problem has been educating salesmen and countermen to handle new, unfamiliar equipment. Here, the company has been very fortunate in having on its payroll Harry Zuck, a graduate mechanical engineer with long experience in heating and air conditioning behind him, and Elwood Fry, a former teacher who ran a refrigeration school in Grand Rapids a number of years ago.

These two conduct regular training sessions for other salesmen and countermen, giving them the background they need to sell unfamiliar products. They are assisted in this work from time to time by manufacturers' representatives.

"Even though all countermen are now quite familiar with all the stock," Mrs. Unseld said, "we notice that heating customers still gravitate to former heating countermen and refrigeration customers to the refrigeration countermen. We expect, however, that this segregation will gradually break down."

Third major adjustment has been that of inventory control. The original firms had used different methods of inventory control, neither of which worked too well with the nearly doubled number of parts to be stocked and kept track of.

Trying 'Average' Method of Inventory

"We are now trying the 'average' method of inventory control for small parts," Mrs. Unseld explained. She borrowed the idea from another wholesaler, she added.

Under this method, an average stock figure for each part is established. Averages are set to give good turnover of all parts and yet keep enough on hand to meet all demands.

Each counterman is given responsibility for maintaining stock in a certain section of stock bins. The average number for each part is posted on its bin.

When the amount of stock in the bin falls below the average figure, the counterman sends a requisition for more units. How many more will depend on anticipated demand for the period immediately ahead rather than on an arbitrary maximum figure, as done in the maximum-minimum stock control method.

When Mrs. Unseld gets the requisition, she adjusts the required number to enable her to take full advantage of quantity discounts from the manufacturer.

On large parts and equipment, orders are placed as equipment is sold. Duplicate tags on parts and in the stock records keep track of inventory.

Purchasing for all branches is centralized at Grand Rapids. Company trucks make regular delivery to the branches, but intercity buses are used for emergencies.

Mrs. Unseld commented that she is in daily touch with each branch through "contract" telephone calls. A contract call is one that is placed at the same time daily and is charged for at a special, lower rate.

The telephone company makes all the arrangements for placing the call and notifies the parties when contract time (10 minutes) is up.

Under this system, branch managers accumulate their daily "emergencies" and dispose of them all with the one call. This has resulted in a considerable saving over separate long distance calls to headquarters everytime an emergency arose, Mrs. Unseld declared.

Calls are timed so that any item needed quickly can be put on a bus and be at the branch in a matter of hours.

Another service that Heating

(Continued on next page)

ILA H. UNSELD, vice president of Heating & Cooling Wholesalers, has long taken an active part in the refrigeration industry. Most recent achievement was her election as chairman of Region 5, Air-Conditioning & Refrigeration Wholesalers, first lady to hold such a position in the history of ARW.

MINERALLAC PERFORATED STRAP

Versatile Hanger Iron

Safely supports hanging pipes, conduits and cables up to 500 lbs. ¾ in. 20 gauge electro-galvanized steel. ¼ in. holes on ½ in. centers. Various lengths available. *Send for literature.*

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Are You Paying Premium Prices For Your Pipe Wrapping?

Now... cut costs, reduce inventories and *profit* more with the *one* standard insulation that fits every pipe and fitting, meets *every* service requirement!

THREE INSULATING BARRIERS in
NO Drip TAPE
1. OUTSIDE
Rough surface prevents free circulation of moisture-filled air—creates dead air barrier.
2. ¼-INCH THICKNESS
Built-in moisture barrier assures utmost insulating efficiency.
3. INSIDE
Dead air is trapped between "corrugated strands", forms added insulation barrier.

NoDrip Tape means more profit, less work on every job . . . saves you time, labor, material. NoDrip Tape eliminates most multiple wrappings needed with thinner wraps . . . inferior wraps.

Why pay more when you can buy the handy 16 foot roll of ¼" thick NoDrip Tape at less than half the cost of a roll of ordinary ⅛" wrapping . . . and *far* below the cost of pre-formed foam cellular insulations?

Next time an equipment cold line job calls for *permanent* protection against condensation drip, "sweating" or frost, insist on using NoDrip Tape. Stops rust and corrosion, too . . . holds temperatures more constant and increases the efficiency of the cooling equipment.

NoDrip Tape is pliable, cork-filled and completely self-adhering. Easy to work with . . . forms an air-tight, 100% vapor and moisture proof jacket. Needs no tools, vapor seals, fasteners, brads or adhesives.

NO DRIP PLASTIC COATING... PROTECTION FOR BIG AREAS

For large pipes, tanks, air ducts, we recommend NoDrip Plastic Coating for permanent protection from condensation, rust and corrosion. Another fine Mortell refrigeration product, NoDrip can easily be applied by brush or trowel to metal, concrete, brick, plaster, tile or composition surfaces.

Easier to Apply...

EVEN AROUND JOINTS, TEES, VALVES OR ANGLES

Mortell COMPANY

Makers of Mortite Caulking Cord and Mortite Caulking Gum

J. W. Mortell Company, Dept. 3
520 Burch St., Kankakee, Ill.

O.K.! Send me full information about the complete line of Mortell refrigeration products.

I'm a Jobber____ Dealer____ Serviceman____

Name____

Firm____

Address____

City____ State____

What Happens When Heating, Cooling Wholesalers Merge--

(Continued from preceding page)

and Cooling Wholesalers offers its customer is free engineering assistance. For heating and air conditioning, this service is performed by Zuck.

When asked, Zuck, an 11-year veteran in the field, will do layout and sizing work for heating and cooling contractors. He does some application engineering, gives advice on what equipment should be used, and occasionally figures heating and cooling loads.

When contractors get into somewhat unfamiliar territory, he checks their plans to help them avert serious mistakes.

One of Zuck's major activities is checking plan rooms in the Builders and Traders Exchange. He looks over plans for construction projects up for bid and makes up quotations on equipment that Heating and Cooling Wholesalers can supply. These quotations are sent to all mechanical contractors bidding on the job.

While Zuck did essentially the same work before the merger, the combined company gives him a broader base of equipment to work with and enables the firm to do more with the lines they handle, he asserted.

Active participation in association work is another "service" that the company performs.

Fry, for instance, has spent considerable effort encouraging heating men to qualify themselves for air conditioning and refrigeration by joining the Refrigeration Service Engineers Society and taking the RSES study course.

Last fall some 28 men took his advice and joined the Grand Rapids Chapter.

RSES has long been a particular favorite of Mrs. Unseld. Back in 1947, when she opened the Kalamazoo branch for Harris Supply, she took the initiative in organizing the Southwestern Michigan chapter. First several meetings of the chapter were held in her store, she recalled. She still retains her membership in that chapter.

Mrs. Unseld, in the course of her remarkable refrigeration career, has held every office except chairman in the Western Michigan chapter of the American Society of Refrigerating Engineers, and has been successively secretary-treasurer, vice-chairman, and now chairman of Region 5 of the Air Conditioning & Refrigeration Wholesalers.

Mrs. Unseld recalled that she got into the business in 1937, when her father first opened a store in Holland. She tended store while he toured the territory with an assortment of parts and supplies in a panel truck.

She moved with the company to Grand Rapids in 1940. When World War II struck, with its draft and priorities, she became a very valuable employe, particularly in counter and sales work.

During these years, she noted, she learned everything she could about the business from the ground up.

"Except for the heavy work, I could do anything any of the men could do," she declared with a smile. "At first, servicemen were hesitant to bring their problems to a woman, but it didn't take long to gain their confidence."

After the war, with the return of her brother Clarence to the firm, she went to Kalamazoo in 1947, to open Harris' first branch. When her father retired in 1949, she returned to Grand Rapids to become president and general manager of Harris Supply Co.

She and her brother opened the company's Lansing branch in 1952 and continued to direct its activities until the merger in 1958.

Leonard Bibik Heads Detroit RSES

DETROIT — Leonard Bibik, owner of Leonard Refrigeration Sales & Service, was elected president of the Detroit chapter of Refrigeration Service Engineers Society at its last meeting of the season.

Richard Haenke, field representative for the Mueller Brass Co., was elected vice president.

Other elected officials: William Pollock, treasurer; Jim Carver, secretary; Dick Parlin, Jack Yates, Ben Pozniak, Mike Sarzynski, educational committee; Nick Schubeck, membership committee; Dave Cern, Alfred Chappell, Ken Wade, Ed Squire, Mel Noble, James Kitzman, Alex Wilson, members of the board; Jack Reichert, sergeant-at-arms; and Robert Totten, Harry McCloskey, refreshment committee.

Norfolk Branch Opened By Richmond Wholesaler

NORFOLK, Va.—Opening of a branch store here under the name of Booth Supply Co. has been announced by Walter E. Booth, president of Refrigeration Supply Co., with headquarters in Richmond.

Besides carrying a full line of air conditioning, heating, and refrigeration parts, the Norfolk branch will specialize in appliance and laundry equipment parts and accessories.

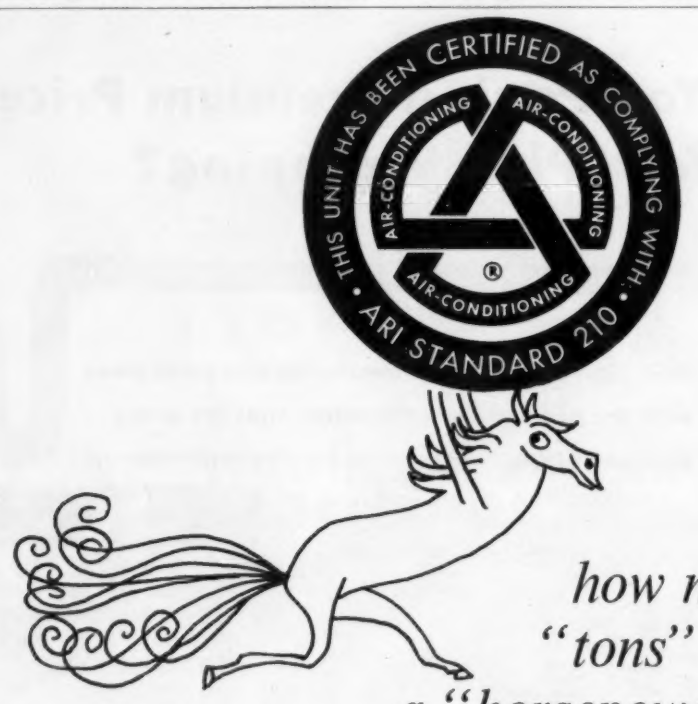
Located in the wholesale district here at 601-3 W. 25th St., the 5,000-sq. ft. store is managed by W. E. "Buddy" Booth, Jr.

The Norfolk store is Refrigeration Supply Co.'s second branch, its first having been established in Charlottesville, Va., recently.

Kearney Joins Sealed Units As Vice President of Sales

ST. PETERSBURG, Fla. — Appointment of T. R. "Bob" Kearney as vice president-sales, of Sealed Units, Inc., contract manufacturer here, has been announced by James "Hans" White, president.

Kearney recently retired as refrigeration manager in the Philadelphia area for Ansul Chemical Co. following 25 years' service with the company.



how many "tons" can a "horsepower" carry?

Or how many "cubic feet" make a "ton"?

Sooner or later, questions like these will come up when you use such terms to describe the cooling capacity of unitary* air-conditioning equipment. When your prospect starts asking them, his confusion may lose you an important sale.

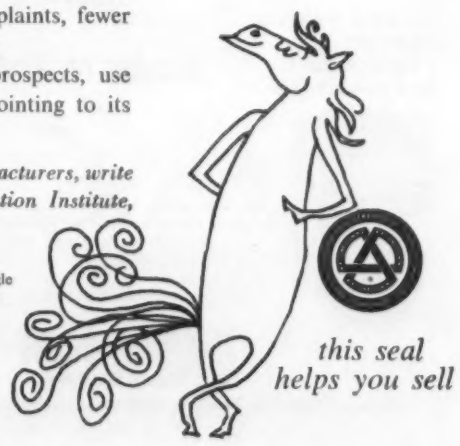
To avoid this, the Unitary Section of the ARI has set up industry-approved standards. Participating manufacturers now rate the cooling capacity of all unitary equipment in Btu per hour. This rated capacity is subject to checking and verification by an independent testing laboratory. A unit, selected at random from a participating manufacturer's stock, is tested under adverse conditions with emphasis on wilting heat and high humidity. Any model failing to deliver rated capacity must be brought up to standard or be withdrawn from sale.

The ARI Seal of Certification assures you of unitary equipment you can count on—equipment that makes it easier for you on any job. It is easier to maintain, too. The dependability of this equipment pays off in fewer complaints, fewer service calls, fewer repairs and replacements, more profits for you.

To avoid confusion when discussing cooling capacity with prospects, use Btu per hour—and *prove* the capacity of your equipment by pointing to its ARI Seal of Certification.

For free explanatory booklet and Directory of participating maunfacturers, write to: Chief Engineer, Dept. A-603, Air-Conditioning and Refrigeration Institute, 1346 Connecticut Avenue, N.W., Washington, D. C.

*"Unitary" air conditioners included in this program: all packaged air conditioners, whether single units or two-piece units (called "split" systems) up to 135,000 Btu per hour in capacity, but not including room air conditioners. ARI Standard 210-58 for electrically-driven equipment; ARI Standard 250-58 for heat-powered equipment.



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G. & E. Equipment Supply Co.
OGDEN AT FULTON CHICAGO 7, ILL.

Hydronics Can Compete with Warm Air, I-B-R School Teaches Contractors

By Frank J. Versagi

INDIANAPOLIS — "In most areas, the cost of a quality hydronics heating system is slightly more than that of competition, but when we consider the inherent superiority of hydronic heat, this is no problem. Further, in many cases, the price difference between hydronic and other heating systems can all but be eliminated by application of proper business procedures by the contractor."

This was the theme behind an intensive three-day hydronics school given to over 40 contractors here by the Institute of Boiler & Radiator Manufacturers. Arthur Wales, experienced I-B-R instructor, kept the theme in mind as he guided the student-businessmen through 22 hours of concentrated study—14 hours of which were spent in actual problem solving.

Greatest emphasis was on *quality;* all heat loss calculations, piping layouts, boiler selections were predicted on the mandatory criterion of optimum, rather than mediocre performance of the heating system.

"Not only do shortcut design and installation methods rob your customer of comfort; they almost invariably make it necessary for you to return several times and eat up any profit in callbacks," Wales insisted.

The NEWS interviewed the students on their reaction to the rather formal and heavy dose of learning to which they were subjected for three days, and all but one or two felt justified in having spent their time and money to attend the course. Future technical columns in the NEWS will discuss phases of hydronics; in the meantime, these are highlights from Wales' instruction at the I-B-R class.

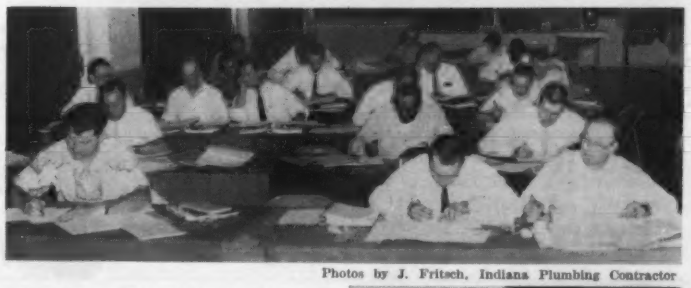
"Accurate calculations of heat losses are critical because this determines the size of lines, pumps, boilers, and radiation area. . . . Don't use shortcut calculations, but, on the other hand, don't add psychological safety factors. . . . If you have used the correct tables and recommendations for heat loss calculations, the appropriate safety factors have been included. . . . Everytime you use a higher figure in selecting equipment, to play it safe, you are unnecessarily adding material cost to the installation.

"A properly dampered fireplace may be ignored in heat loss calculations. If the damper is faulty, it may be repaired for much less than the cost of wasted fuel. . . . If the fireplace is undampered, it is practically impossible to calculate a reliable heat loss because of such variables as cross section of the flue, temperature difference, wind velocity. . . . Just as a guess, if you have to, add 20% to the room's heat loss in such a case.

"Design at 215° F. average water temperature, rather than at the lower temperatures of 180°, 190°. . . . You use less radiation to give heat. . . . Temperature readings at a test house showed less temperature variation in the structure at 215° than at 170°. . . . Operating cost on a 60,000 B.t.u.h. house is only 2 or 3 dollars more per season. . . . On an existing system designed for 170°, you can't go to 210° and realize any benefits. . . . There is no increased liming in higher temperature systems, because the system is closed, and make-up is limited. . . . If liming is a real problem, especially on the domestic water heater, use water softening methods.

"Noise is no problem if the system is correctly designed, which means maximum water velocities of 3-5 ft. per second. . . . Properly designed radiators and piping systems will not make noise when heat is turned on and off. . . . As further protection against noise, be sure allowance is made for expansion and contraction of all piping or tubing which passes through floors and walls—and don't snug pipe right up against a joist.

"If the house is designed architecturally for future wing or attic expansion, include the projected heat losses in the original design, so all your components will be correctly sized. . . . Unnecessarily oversizing a boiler decreases warm-up time only about two or three minutes in the morning. . . . With forced water feed, there is no need to favor one room over another in laying out the piping. . . . Split level houses make split piping circuits mandatory. . . . Splitting circuits generally results in smaller pipe sizes."



Photos by J. Fritsch, Indiana Plumbing Contractor

STUDENTS AT THE I-B-R school in Indianapolis spent 14 hours in problem solving, as they are doing here.

ARTHUR WALES, I-B-R instructor, explains to NEWS Technical Editor Frank J. Versagi the extent of subject matter covered in the 3-day course which has now been given to more than 13,000 students.

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contractor...
dealer...
engineer...

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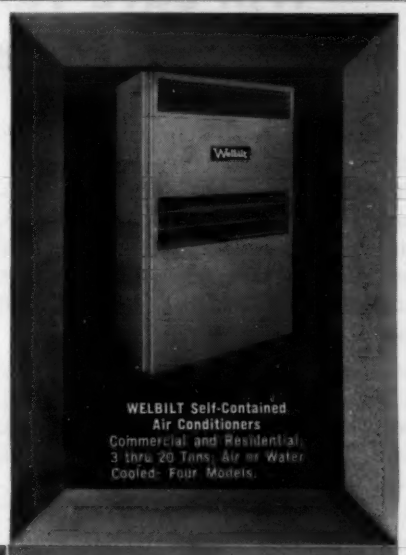
the complete line



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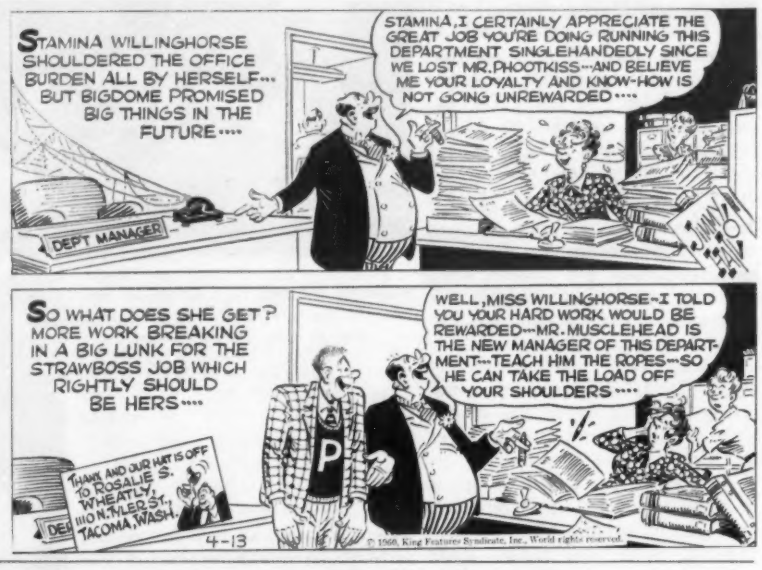
2961

They'll Do It Every Time

by

Jimmy Hatlo


STAMINA WILLINGHORSE SHOULDERED THE OFFICE BURDEN ALL BY HERSELF... BUT BIGDOME PROMISED BIG THINGS IN THE FUTURE....
STAMINA, I CERTAINLY APPRECIATE THE GREAT JOB YOU'RE DOING RUNNING THIS DEPARTMENT SINGLEHANDEDLY SINCE WE LOST MR. PHOOTKISS--AND BELIEVE ME YOUR LOYALTY AND KNOW-HOW IS NOT GOING UNREWARDED....
DEPT MANAGER
SO WHAT DOES SHE GET? MORE WORK BREAKING IN A BIG LUNK FOR THE STRAWBOSS JOB WHICH RIGHTLY SHOULD BE HERS....
WELL, MISS WILLINGHORSE--I TOLD YOU YOUR HARD WORK WOULD BE REWARDED--MR. MUSCLEHEAD IS THE NEW MANAGER OF THIS DEPARTMENT--TEACH HIM THE ROPES--SO HE CAN TAKE THE LOAD OFF YOUR SHOULDERS....
THANK AND OUR HAT IS OFF TO ROSALIE S. WHEATLY, 110 N. TYLER ST., TACOMA, WASH.
4-13
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Air Conditioned Classrooms Will Save Taxpayers Money, Educate More Young People

(Continued from Page 1)

but the chance for us to help America solve one of its most pressing problems.

What's that? It's the dilemma of updating our woefully obsolete and disgracefully wasteful school calendar to accommodate the flood of education seekers which will inundate our facilities in the next dozen years.

By crusading for this idea we can provide, at relatively small cost, the school room space needed so desperately to cope—not only with present shortages—but with the rapidly *increasing* need for more facilities and instructors at all levels.

Presently our educational system is supporting a number of "sacred cows"—the most voracious and non-productive of which is the "ox-cart" school calendar of eight months learning and four months vacation.

In the days of our forefathers, when it was a "nice thing" for our young people to have some "schoolin' " and when our country was supported in the main by a manually operated agrarian economy, there was some sense in releasing student and teacher—in the Good Ole Summertime—so that they might help in the production of food.

Today, however, we no longer inhabit an economy dominated by agriculture.

We live in an age of massive mechanization and automation, wherein advanced "schoolin' " is not merely desirable, but *absolutely essential.*

The more education of high quality a young person can acquire, the better it is—not only for him as a person, but for all of us as a nation.

Yet, here we are, still conducting our educational program *within the time limits imposed by a totally obsolete yet jealously guarded school calendar calling for only eight months of school annually.*

As George Jensen, president of Tem-Trol, puts it:

"We are maintaining a system which leaves the world's most magnificent educational plant standing idle and deteriorating for one third of the time each year plus. . . .

"A calendar that crowds 30 to 50 young people into a single classroom, presenting instructional and disciplinary problems which the average teacher simply cannot meet successfully.

"A calendar that makes teaching a part time job, and therefore denies true professional status to the greatest and most dedicated teaching staff in the world."

(Result of this anachronism is a pay scale too low to attract the best qualified young people into the educational profession—and too low also to hold good teachers and keep them contented and inspired.)

"A calendar that is basically responsible for a turnover in personnel which would, if it occurred in a business, cause the board of directors to demand that it either be corrected or to fire the management responsible for such loss of personnel.

"A calendar that is, in the main, responsible for religious denominations practically closing shop for three months insofar as church and Sunday School are connected and concerned.

"Furthermore, we are all faced with the problem of cramming our family vacations into a 90-day period during summer, whereas many of us in office and shop alike are able and interested in vacationing and traveling at other times of the year."

By acquainting ourselves with the facts in connection with our "ox-cart" school calendar, and then encouraging public discussions of the many aspects of that obsolete academic year, we not only can help America solve one of its most serious problems, but we can profit as an industry.

Air conditioning of existing classrooms and other school areas can create the much needed space for burgeoning enrollment. And do that more speedily and at far less expense than new construction of equivalent capacity!

Going to school in the summer, *and teaching school in the summer,* can be made a highly desirable and efficient procedure.

Thus, men in our industry can contribute greatly to the acceptance of air conditioning everywhere as a necessary and economical adjunct to modern living.

Science and industry have placed at our disposal the means with which to accomplish this boon. It is up to us in the air conditioning field to do something about it, and do it now.

What a privileged opportunity to do a public service!

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark reg. U.S. Pat. Office; Est. 1926

AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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VOLUME 90, NO. 6, SERIAL NO. 1,628, JUNE 6, 1960

From the Files of the News

25 years ago . . .

The Air Conditioning Manufacturers Assn. held its first annual convention. Originally the Unit Air Conditioner Manufacturers Association, the name of the organization was changed and reorganization plans inaugurated when the group came under the wing of the Refrigerating Machinery Association.

At the ASRE Spring meeting pioneer work in testing expansion valve capacity was described by Dan Wile, Detroit Lubricator, and methods of rating and selecting extended cooling surfaces was discussed by H. B. Pownall of York. . . . Liveliest of all the sessions was that on air conditioning, with F. O. Urban describing General Electric's new psychrometric chart, and S. C. Bloom, Chicago consulting engineer, outlining several trends which air conditioning might take. C. D. Haven, the Thermopane Co., presented the results of some tests on window glass as insulation. . . . One of the hot points of discussion was about the amount of fresh air needed in a system for proper odor control, the conservative side holding out for 2 c.f.m. per person. . . . The NEWS played host to the ASRE membership at a special party at the NEWS headquarters.

Twelve manufacturers and distributors of air conditioning equipment exhibited their 1935 models at Commonwealth Edison Co. of Chicago's Fourth Annual Air Conditioning Show.

10 years ago . . .

Through refrigeration and a dry freeze process, medical science has increased the life of tuberculosis vaccine from ten days to one year, it was announced by the Research Foundation in Chicago.

Carrier is to supply Pittsburgh's newest and largest skyscraper with cooling equipment—three centrifugal refrigeration machines of 800 hp. each and another of 300 hp. Approximately 5 miles of 3 to 10 in. conduit will distribute conditioned air at high velocity to some 3,000 air distribution units in the new skyscraper.

Ralph A. Gonzales of Chrysler Airtemp expressed the fear that although air conditioning and refrigeration account for only 8% of the total water pumped, these industries may be "scapegoats" during the widespread water shortage, and water for these systems will be prohibited, even though such "prohibiting" would do very little to solve the problem. . . . The American Water Works Assn. also announced that if water is to be available when domestic and industrial users want it, around $3,250 million must be spent between 1950 and 1960 to build up this country's systems.

50 years ago . . .

From the RECOLD MUSEUM

These 50-to-60 years ago items are from the Recold Museum Library, maintained by Hy Jarvis, Recold Corp. president.

Every man has a right to his own opinion on the age old subject of drinking. Sometimes, one individual can make life very complicated for others. Take the situation in Miller, S. D. This small community has been dry for three years. Then, last month, it went wet by public demand. As might be expected, three saloons immediately opened to meet what could be a lively demand. There is one fly in the ointment, however, in the person of one W. T. Rafferty. Mr. Rafferty is a prohibitionist who lives up to the spirit of his principles. And, he happens to be the only ice man anywhere near town. He has sent out the word that the aforementioned saloons will get none of his ice; nor will he sell a pound to a liquor dealer. To import the ice required will be rather expensive, so as of this date the innkeepers of Miller, South Dakota, not to mention some of the citizens are in a discouraged frame of mind.

U. S. Issues Standard For Kinds, Sizes of Pipes, Ducts, Fittings

WASHINGTON, D. C. — A new standard for the kinds and sizes of pipes, ducts, and fittings for warm air heating and air conditioning systems has been released by the Commodity Standards Div., Office of Technical Services, Business and Defense Services Administration, U. S. Dept. of Commerce.

A recent survey by the Air Distribution Institute is the basis for the standard, which is a revised edition of the 1956 issue, the announcement said. It lists the kinds and sizes of prefabricated pipes, ducts, and fittings in greatest demand by the building trade today.

"The chief purpose of the standard is to serve as a guide for builders, suppliers, and the general public."

The standard is entitled "Simplified Practice Recommendation R207-60, Pipes, Ducts, and Fittings for Warm Air Heating and Air Conditioning Systems. Copies may be obtained from the Superintendent of Documents, Government Printing Office, at 15 cents each.

Obituaries

Frank R. Slessar

MELBOURNE, Australia — Frank R. Slessar, 55, general manager of Email's Air Conditioning & Industrial Refrigeration Div. and managing director of the Email subsidiary R. Werner & Co. Pty. Ltd., died suddenly from a heart attack in his Kew home recently.

He was one of the best-known personalities in Australian refrigeration and, through a number of overseas visits, had many friends in the U.S.A. For a period of seven years, he was chairman of the Refrigeration Section of the Victorian Chamber of Manufacturers.

Harold C. Benington

TOLEDO—Harold C. Benington, 59, former president and general manager of Benington Bros., air conditioning and refrigeration firm, died recently of a heart attack while playing golf.

He founded the firm of H. C. Benington 29 years ago and installed some of the first mechanical refrigeration systems in grocery stores and restaurants in the city. He was a charter member and former president of the Refrigeration Service Engineers Society of Toledo.

Mrs. Lorin G. Miller

EAST LANSING, Mich. — Mrs. Isma S. Miller, 69, wife of Dean Emeritus Lorin G. Miller of Michigan State University died suddenly May 23 at their residence in Eaton Rapids, Mich.

Dean Miller is nationally know in the warm air heating and air conditioning industry as one of the leaders in education and as a research advisor.

Mrs. Miller was known to hundreds of dealer-contractors, wholesalers, and manufacturers throughout America.

Replaces Old Committee

San Diego Bureau of Home Appliances Sets Up Air Conditioning Div., Huntington Is Chairman

SAN DIEGO, Calif.—An Air Conditioning Div. of the Bureau of Home Appliances of San Diego County was formally established recently during a luncheon meeting at Mission Valley Inn.

The bureau reported that nearly 75 representatives of contractors, distributors, manufacturers, utility executives, and others concerned, participated in the "wonderfully enthusiastic" meeting.

Dick Huntington of University Mechanical & Engineering Contractors and Dave Jackson of Jackson & Blanc, who were chairman and vice chairman, respectively, of the former Air Conditioning Committee, took like titles in the new division.

An election also was held to select an Executive Committee. Elected were:

Contractors: John Stewart, Oceanside Air Conditioning; Al Murray, Kitzman's Plumbing & Heating; Stewart Gibson, Escondido Sheet Metal Works; Robert Townsend, A. O. Reed & Co.; Tom Bossert, Bossert Sheet Metal.

Distributor - suppliers: Stewart Bayne, Southwest Supply Co.; O. M. Butler, Allied Refrigeration Supply; Fred Antelline, Air Conditioning Supply Co.; William Sullaway, Hess, Greiner & Polland; and William Hogben, General Electric Appliances Co.

Manufacturers: Ralph Snow, The Trane Co.; David Snow, Worthington Corp.

Walter Chapman, commercial manager, San Diego Gas & Electric Co., is the utility representative on the committee. Through cooperation of San Diego Gas & Electric, Fred A. Clarke will be made available as coordinator.

Chairman Huntington announced appointment of Tom Bossert to head the Commercial Air Conditioning Committee, with Stewart Bayne as vice chairman. The Residential Committee will be under the chairmanship of Stewart Gibson, with Fred Antelline vice chairman.

O.K. Cooling for Birmingham P. O.

BIRMINGHAM, Ala. — Postmaster J. Roy Moncus has been advised by Senator Lister Hill that a $666,000 appropriation to air condition the Birmingham Post Office has been approved by the Public Works Committee of the U. S. Senate.

The postmaster said this assured final approval of the appropriation and he anticipates that the contract will be let soon after July 1. This climaxes several years of trying to get the post office air conditioned.

Ask Separate Contracts

SALT LAKE CITY — The Utah Plumbing & Heating Contractors Association has asked for state legislation separating the plumbing contract from the general contract on all public works in the state.

THESE NEW McQuay RESIDENTIAL EVAPORATORS

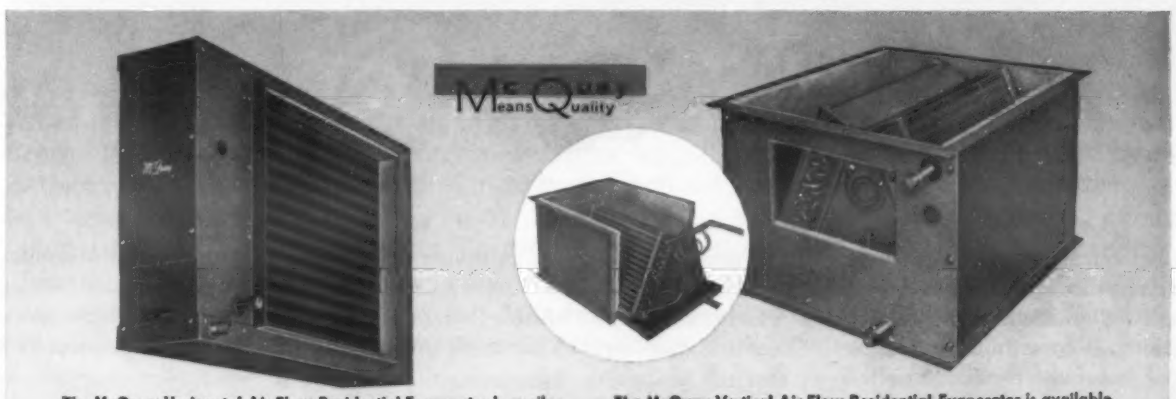
Make Air Conditioning SING!

Now available with aluminum cabinets

Coil section slides out for easy access

These McQuay residential evaporators make air conditioning really SING in quiet, trouble-free operation. The combination of McQuay quality construction and engineering know-how and experience creates a harmony of cooling and dehumidifying that provides the finest, most dependable residential air conditioning available.

A wide range of vertical and horizontal air flow evaporators from 2 to 7½ tons nominal capacities available to fill the needs of any size home in any climate. Contact your nearest McQuay wholesaler, or write to McQuay, Inc., 1607 Broadway Street N. E., Minneapolis 13, Minnesota.



The McQuay Horizontal Air Flow Residential Evaporator is available in 2, 3, 4, 5 and 7½ tons nominal capacities. It is designed for mounting in horizontal duct work of warm air furnace systems, and is extremely compact and thoroughly insulated with fiber glass. A service panel and space for internal valve mounting is provided. Drain pan for collection of coil condensate is standard equipment.

The McQuay Vertical Air Flow Residential Evaporator is available in 2, 3, 4, 5 and 7½ tons nominal capacities. It is designed to mount in the warm air outlet of either upflow or downflow vertical type furnaces, and has exclusive McQuay Ripple-Fin coil construction. Entire front panel removable to permit access to drawer type coil and drain pan assembly.

McQuay INC.

AIR CONDITIONING • HEATING • REFRIGERATION

2-3-4-5-7½ TONS CAPACITIES

UTILIZE FURNACE BLOWER

Credit Policy and Small Order Problems Hit Wholesalers, NHAW Panel Indicates

NEW ORLEANS — "I think our industry is going to hell," declared one of the opening panelists participating in a "workshop" session on general policy matters at the recent spring convention of Northamerican Heating & Airconditioning Wholesalers Association here.

"Our margins are too close, and how many dealers are putting us in the retail business by buying only for the job or for the day and then demanding credit for returned parts?" also commented C. B. Buckley of Snodgrass & Smith Co., Inc., Denver.

"Some return merchandise must be expected, but those who abuse the privilege should be required to pay for such abuse," said Buckley, who also urged that the "who's" of returned merchandise should be analyzed by the wholesaler to single out those dealers who are (1) not very active, (2) weak in technical know-how, and/or (3) weak financially.

"The problem of collections is growing," pointed out panelist R. H. Swart of Heating & Cooling Wholesalers, Inc., Grand Rapids, Mich. "A survey has shown that the ratio of bad debt loss to sales doubled between 1956 and 1958, and it's probably still growing.

"The customer can't be right if he withholds payment on his account for extended periods," Swart declared.

"We are raising our 6% per annum service charge for past-due accounts to 1% a month because we have found that customers tended to pay the 1% charge before our 6% charge," he added, also mentioning that the "1% charge helps pay the cost of keeping an over-due account on the books."

Stressing that "good credit management begins long before the collection crisis is reached," Swart explained that his company has prepared a form letter asking the individual dealer to say how much credit he'd like to have.

"Then we study his past purchases to help evaluate his credit rating, and we also get his current financial statement. Your credit policy should be explained when the account is opened," Swart also said.

Small Orders

Discussing the matter of "small orders," W. Gene Gwin of Mobile Supply Co., Mobile, Ala., indicated that rather than being considered a problem, "small orders are the reason for the existence of the wholesaler."

Instead of setting up a minimum dollar order charge, "we should be salesmen enough to sell him more than the minimum," Gwin also said.

"What about the supermarket operator's small order problem? He solves it by merchandising rather than a policy, and so must we," Gwin declared. "We'll have to display more and sell more. Small orders are opportunities, not problems, for the wholesaler."

Credit Is Necessary; Pricing Must Allow for It

Representing the manufacturer, Wm. W. Morrisey of Lau Blower Co., reminded wholesalers that "we are subjected to the same pressures your salesmen are" with respect to credit.

"We must realize that credit is necessary, and its cost must be allowed for in pricing," Morrisey said.

"The firm just starting up may need extensions and consignments," he continued. "If he sells at a legitimate price, this is okay, but it's not okay if he uses this credit to cut prices in hopes of getting all the business.

"We cannot afford to offer any inducement that we can't live with permanently," Morrisey also commented. "Those 'once-in-a-lifetime' deals usually happen again."

Devoting his discussion to the question of discounts on small orders, Jos. M. David of Lewie David Co., Sullivan, Ill., drew a distinction between "fill-in" orders which a wholesaler must place with his supplier to balance out his stock when there has been a sudden drain on a particular item and "special" orders such as "special size registers to satisfy some knuckle-head architect."

On the latter special orders "I expect to pay the long price," David said, "but if we work as a team with our suppliers so that the manufacturer knows he'll get all or most of our business, and we stock, etc., then we don't expect to pay a premium for 'fill-in' orders. If I have to pay a premium for such orders, I'll find another source," David threatened.

'Spindling' Orders

"Spindling" of orders was also mentioned by David, who was not overly enthusiastic about the practice.

"It usually starts out," he explained, "with a dealer ordering 500 registers to get a 20% discount with the requirement that he has to take 100 at a time. Soon competition, etc., forces the requirement down to taking only 90 at a time, and then it's cut to a mere armload."

The question of exclusive territories was brought up by Eugene Brown of Carolina Heating & Appliance Co., Charlotte, N. C., who suggested that "the wholesaler needs an exclusive arrangement with his manufacturer so he can do the necessary merchandising and servicing."

(Most wholesalers present indicated by a show of hands that they had exclusive arrangements with manufacturers.)

"But the wholesaler who is expecting more than normal help from the manufacturer and the dealer must give more than the usual assistance himself," Brown declared.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

This advertisement will appear in THE WALL STREET JOURNAL, June 7, 1960, commemorating the importance of the refrigeration service engineer to over 662,000 business and industry readers.

DU PONT SALUTES...

The Men Who Keep 'em Running

Mechanical refrigeration is one of those necessities of today's modern world that most people have come to take for granted. It is vital to food preservation and health; it contributes to human welfare and comfort and improved production efficiency through air conditioning, and it is helping in the missile age as an integral part of environmental research.

Even more important are the people who make this modern wonder possible. One group is the refrigeration service engineers. Their role is absolutely essential because they are the men who install, service and maintain the nation's refrigeration and air conditioning equipment . . . the men who keep 'em running.

Du Pont joins the rest of the refrigeration industry this week in saluting the refrigeration service engineer. Your refrigeration service problems are in good hands when you call on the professional service engineer. And if your equipment should need refrigerant, you can be sure of dependable performance with Du Pont "Freon" refrigerants . . . proved in nearly 30 years of service and preferred by service engineers everywhere.

E. I. du Pont de Nemours & Co. (Inc.)
"Freon" Products Division • Wilmington 98, Delaware
Manufacturers of Freon® *Premium Quality* Refrigerants

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

DU PONT
REG. U.S. PAT. OFF.

*Container illustrated is our new, lightweight "Zephyr" cylinder—designed for easier, more convenient handling.

NATIONAL REFRIGERATION SERVICE ENGINEERS SOCIETY WEEK

Venezuelan Firm To Make, Market Hupp Appliances

CLEVELAND—A program to manufacture and market appliance products of Hupp Corp. in Venezuela was announced here by Hupp Corp. and Industries Integradas S.A. (I.N.S.A.), a newly-formed Venezuelan company.

A 250,000-sq. ft. plant will be built in the industrial city of Valencia to manufacture under license Hupp's Gibson brand room air conditioners and refrigerators and Perfection brand gas ranges and certain kerosene cooking stoves. Ground breaking for the new plant is scheduled in June and capacity operations are expected within three years.

Under the contract, signed here by Donald S. Smith, president of Hupp International Div., and Roberto Salas Capriles, president of I.N.S.A., Hupp will provide I.N.S.A. with designs, technical know-how, certain tools, and component parts until manufacturing is under way.

Upon request, Hupp International will send technical specialists to Venezuela to assist in establishing manufacturing operations. Hupp International will have exclusive sales rights for appliances made by I.N.S.A.

Hupp's association with I.N.S.A. is part of an over-all program to establish in Venezuela an industrial organization to produce appliance products and automotive replacement parts under license from American manufacturers, it was pointed out.

A Venezuelan source of supply will afford significant freight savings for Hupp International in supplying appliance products to distributors and dealers in Latin America, according to Smith.

Dr. Salas predicted that by 1963 the new plant will supply 15,000 refrigerators, 20,000 gas ranges, 5,000 room air conditioners, and up to 40,000 kerosene ranges a year to Venezuelans. A sales volume of $20 million in appliance and auto parts is foreseen for the new plant when it reaches capacity operations.

Industrias Integradas S.A. is capitalized at 10,000,000 Bolivares ($3 million U. S.), fully subscribed by Venezuelans. It is sponsored by Consorcio para Promocions Industriales, C.A., a corporation consisting of ten Venezuelan financial institutions formed to establish industrial manufacturing facilities in Venezuela.

Smith International Names Leinenkugel

MILWAUKEE — James M. Leinenkugel has been appointed product manager - distributive products for A. O. Smith International S.A., according to J. J. Gibbons, director of marketing for Smith's international operation.

Leinenkugel replaces Fred Bote, who has resigned to accept a position with another company.

Tops In Europe

Italy Claims Most Refrigerated Space for Food Storage, Processing

ROME, Italy—With over 83 million cubic feet of refrigerated facilities for processing and storing foods, Italy claims the lead over the rest of Europe, citing France's "61 million cubic feet and smaller capacities elsewhere in Europe."

Next link in Italy's *cold chain* are the 1,425 water-ice plants with a capacity of 12,000 tons daily, and some 2,000 tons daily of dry ice.

The Italian railroad system possesses 5,700 refrigerator cars, mostly fitted with water-ice or dry ice refrigeration, and about 600 refrigerated trucks similarly equipped. Experiments are being conducted with the use of cold plates filled with brine which are cooled by units at fixed locations, as well as with direct mechanical refrigeration.

Commercial refrigeration is able to handle distribution to consumers and institutions, and the increasing use of home refrigerators complete the cold chain which has meant the preservation and use of food products formerly wasted.

What is said to be the largest and most modern refrigerated warehouse in Italy was recently completed on the outskirts of Milan.

Costing $2.5 million, the five-story buillding will be able to handle up to 400 metric tons of food daily. Total storage capacity will be 50,000 cubic meters. The plant also will have facilities for chilling four railroad cars of perishables an hour and production capacity, for reicing of transit cars, of 25 metric tons a day.

The Italian firm, Adafrigor, S.p.A., is seeking additional capital investment to expand these capacities. The plant will more than double the city's existing perishable-food storage facilities and will provide Milan with its first cold storage for fresh fruits and vegetables.

Bristol Co. Appoints Gabey Export Mgr.

WATERBURY, Conn.—H. E. Beane, vice president-sales, The Bristol Co., announced the appointment of R. Melvin Gabey as export manager.

Gabey has been field sales engineer of Bristol's Dayton office. He will now be responsible for all of Bristol's export sales activities.

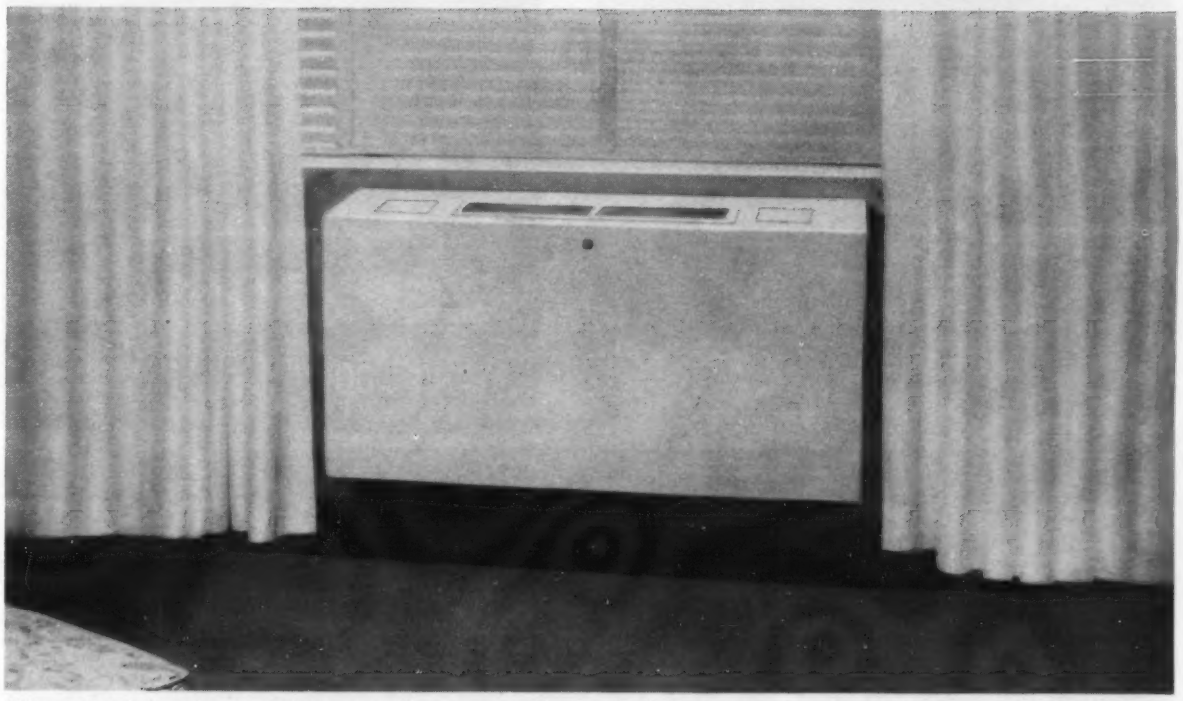
Trade Fair Promoting Chicago as World Port Starts June 20

CHICAGO—The 1960 Chicago International Trade Fair will be staged June 20 through July 5 at Navy Pier by the Chicago Association of Commerce and Industry to accelerate the growth in import-export business and to promote Chicago as a world port.

The first five days of the Fair, June 20 through June 24, have been set aside exclusively for attendance by professional buyers of industry and business located throughout the United States, as well as many other countries.

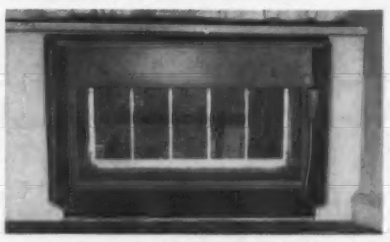
A comprehensive display of industrial and consumer goods and products from around the world will be shown during the fair.

THIS AMERICAN-STANDARD
THROUGH-THE-WALL UNIT
HEATS AND COOLS



When the job calls for adding cooling to an existing building, use the Type 40 Remotaire. This year 'round heating-cooling unit is ideal for modernizing big buildings. Old radiators are replaced by an attractive under-window unit which is installed through the wall. It connects to existing steam or hot water heating piping, or uses built-in electric heating coils. A self-contained cooling circuit eliminates the need for central cooling plant and tower. Featuring individual-room unit control, Type 40 units can be easily installed in a room, suite or floor at a time to fit customers' budgets. **For information, see your American-Standard representative or write American-Standard, Plumbing and Heating Division, 40 West 40 Street, New York 18, New York.**

Hole is cut through the wall.



Sleeve inserted, louver attached.

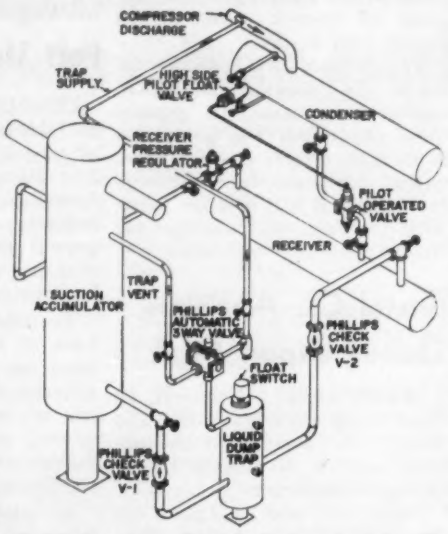
Heating-cooling chassis slides in.

American-Standard and Standard® are trademarks of American Radiator & Standard Sanitary Corporation

AMERICAN-Standard
PLUMBING AND HEATING DIVISION

Ammonia Circulation System Uses No Pumps

● A new centralized ammonia circulation system, to achieve a semi-flooded liquid control in direct expansion coils without the use of pumps, has been introduced by H. A. Phillips & Co., Dept. AH&RN, 3255 W. Carroll Ave., Chicago.



It produces a constant pressure plant feed with circulation rates up to three times the evaporation rate, and is adaptable to existing plants as well as to new construction, according to the company.

"It combines the benefits of better heat transfer and simplified piping for evaporator control and defrosting with protection to the compressors," the company said.

"Several arrangements have been developed and tested for single stage and multiple stage plants. Coil heat exchangers may be added to the accumulators to improve the performance by reducing flash gas and reducing the liquid return quantities.

"Simple orifices or balancing valves may be used to meter the liquid to individual evaporators, or circuits. Conventional float valves and thermostatic expansion valves may be retained since the liquid feed pressure can be adjusted to the plant conditions so as to provide sufficient liquid head to insure fully wetted coils."

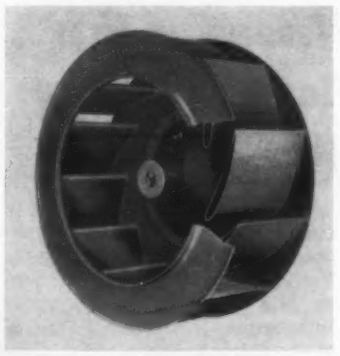
Fiberglas Filter Has Higher Efficiency

● Fiberglas air filter, type 004-12, for specialty applications in high efficiency air filtration, has been announced by Owens-Corning Fiberglas Corp., Dept. AH&RN, Toledo 1.

Produced for commercial purposes, the material is designed for use where a higher than normal degree of air cleaning is required.

Performance of the new Fiberglas filtering media is claimed to be equivalent to that of the electrostatic method of air cleaning. However, it can be used in certain applications for which the electrostatic method is not suitable.

The product is available in sizes to 72 in. wide, in rolls 100 to 200 ft. long, or cut to specification.



CUTAWAY Series 116 wheel shows airfoil blading and low velocity radial rim wheel design.

Fan Has Low Speed Radial Rim Wheel

● A new line of airfoil bladed centrifugal fans said to feature an exclusive low velocity radial rim wheel design for general ventilation and industrial process applications is now available from American-Standard Industrial Div., Dept. AH&RN, Detroit 32.

Designated the Series 116 line, the new units are qualified to carry the AMCA Certified Rating Seal for the full range of sizes, Class I through Class III, it was stated.

The Series 116 fan is reported to be a completely new design, "the product of an exhaustive development program." It is available in 15 sizes in both single and double-inlet designs. The fan is built in accordance with industry sizing standards as outlined in AMCA Bulletin 110, and is available in standard AMCA arrangements.

The new fans are recommended for use in supply and exhaust systems for ventilation and industrial processes; in air conditioning installations of conventional low velocity, high velocity or double-duct systems; in industrial air conditioning systems; in heavy-duty industrial systems; and in ventilation of tunnels for vehicular, pedestrian, and railroad traffic.

"Air entering the Series 116 fan inlet is accelerated gradually to a maximum at the throat section," the division explained. "The radial rim wheel design allows the air to expand over the entire blast width and pass over the airfoil shaped blades at relatively low velocity with minimum turbulence. With this wheel design, efficient pressure conversion through the wheel is accomplished and boundary separation is reduced.

"Air leaves the blade tips at relatively low velocity as compared with conventional conical and curved rim wheel designs. The reduction of turbulence resulting from airfoil blading combined with the radial rim wheel contributes to unusually quiet fan operation."

Fin-Comb Services Wider Spaced Fins

● Addition of the P-8 "Fin-Comb" to the P-12 Fin-Comb introduced earlier this year to the refrigeration and air conditioning trade has been announced by Watsco, Inc., Dept. AH&RN, 1020 E. 15th St., Hialeah, Fla.

"Like the P-12, the new P-8 is made of tough, durable nylon," the company said. "With a simple combing action the most stubborn fins on condensers and evaporators can be straightened; matted accumulation of lint and dirt can also be removed at the same time."

The P-8 is designed for servicing units with 4-5-8-10 fins per inch; the P-12 for units with 6-7-12-14 fins per inch. Using either Fin-Comb, almost any unit on today's market can be serviced, it was stated.

For Performance — Capacity — Low Maintenance

Select a

LARKIN ZEPHYRCON

Air-Cooled Condenser

9 Belt-Driven Models—5 to 40 Tons . 5 Direct-Drive Models—2 to 10 Tons

ENGINEERED FOR PARALLEL USE FOR VIRTUALLY ANY CAPACITY

Larkin Zephyrcon Air-Cooled Condensers are available in two series: direct-drive FC models—for economy and minimum maintenance; and belt-driven BFC models—for larger installations and the lowest possible noise level.

Multiple circuits—for operating more than one compressor from a single condenser—are available for all models at no extra cost.

PEAK PERFORMANCE YEAR 'ROUND

When used with the Larkin Posi-Trol control system, which maintains head pressures in low ambient temperatures, the Larkin Zephyrcon functions at peak performance the year 'round in any climate.

Compare the features point for point; check the performance data, and make the wise selection—Larkin Zephyrcon Air Cooled Condenser.

BASIC RATINGS (30° + D)

FC SERIES — DIRECT DRIVE

Model No.	Capacity at Evaporator BTU/HR	Tons	Cfm
FC-2	27,700	2.30	2500
FC-3	37,350	3.21	3500
FC-5	62,500	5.21	5500
FC-8	95,600	7.96	7500
FC-10	124,000	10.3	9100

BFC SERIES — BELT DRIVEN

Model No.	Capacity at Evaporator BTU/HR	Tons	Cfm
BFC-5	62,500	5.21	5500
BFC-8	95,600	7.96	7500
BFC-10	124,000	10.3	9100
BFC-13	149,200	12.4	12000
BFC-16	191,200	15.92	15000
BFC-20	248,000	20.6	18200
BFC-26	298,400	24.8	24000
BFC-32	382,400	31.8	30000
BFC-40	496,000	41.2	36400

OUTSTANDING FEATURES

- Patented Larkin cross-fin coil — aluminum fins and staggered copper tubes.
- For use indoors or outdoors.
- A single large fan on BFC model assures low operating noise level.
- Motor on BFC model is standard NEMA design mounted on adjustable base.
- Slow speed motor on FC model is permanently lubricated, has overload protection, and is mounted on resilient base.
- Casing is of heavy-gauge steel.
- Unit finished with baked-on epon-base primer and melamine top coat for maximum protection.
- Motor is enclosed in casing, protected from the weather.
- Discharge shield available.
- Fan Guard is standard equipment.
- Return bends protected by heavy-gauge shield.

See Your Wholesaler
Or write for Bulletin 1031-C

LARKIN COILS INC.

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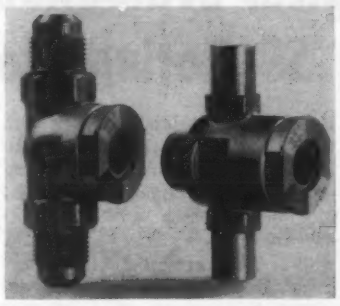
ATLANTA 1 GEORGIA

Moisture Indicator Elements Screw Out

● A one-piece indicator unit which screws out of the brass body is featured in its new combination moisture indicator and sight glass for refrigeration systems, according to Ansul Chemical Co., Dept. AH&RN, Marinette, Wis.



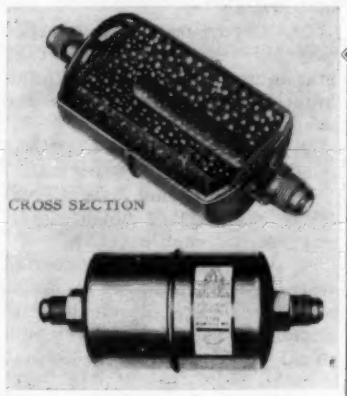
"The '200' Dry-Eye combines a Refrigerant-12 indicator, a Refrigerant-22 element, and a sight glass in one interchangeable assembly," it was explained. "The unit screws out of its brass body in one piece to permit worry-free soldering of sweat connections.

"With the indicator assembly removed, there is no possible way to damage the elements during installation. Once installed, the indicator body is permanently in the line, but the assembly containing the indicating elements can be screwed in or out at any time."

The Dry Eye's R-22 element gives specific moisture indication for Refrigerant-22, according to the company. It is designed to provide the low relative humidity change point required to indicate a safe level. The element shows green for dry, pink for wet.

"The Dry-Eye's Refrigerant-12 indicator shows pink when wet and blue when dry. It works equally well in systems using Refrigerants 11, 13, 113, and 114.

"The indicator body is a one-piece brass forging, available in all standard sizes, flare and sweat, in both in-line models (L-200) and T models (T-200)."



Block Filter-Drier Introduced by Alco

● After years of research, a block-type filter-drier, combining silica gel "P.A. 400" and molecular sieve, has been developed for the refrigeration industry, it was announced by Alco Valve Co., Dept. AH&RN, 865 Kingsland Ave., St. Louis 30.

"This accomplishment has been made possible through a grant to the Industrial Chemical Research Laboratory of the University of Miami which is under the direction of Dr. Walter O. Walker, dean of the Div. of Research in Industry, one of the outstanding authorities on desiccants in the refrigeration industry, working in cooperation with the Alco Valve Co.'s research laboratory," the announcement said

"Extensive field testing of this new block-type filter-drier has demonstrated that these desiccants, bonded in rigid form by an accurately controlled process which creates high mechanical strength, will not permit separation under liquid surging or severe shake-up.

"Further, the geometry of this block exposes maximum surface to the liquid flow and assures even distribution of filtered particles, resulting in filtration in depth, thus preventing rapid rise in pressure drop. These features assure longer filter-drier operational life.

"In addition to the high filtering qualities, the combined desiccants adsorb acids and colors and because of the low amount of binder required for mechanical strength, the Alco 'Dri-Kleaner' contains nearly pure desiccants, making it possible to easily meet the ASRE-ARI Standards.

"Full flow fittings of copper (ODS) and brass (SAE) minimize pressure drop through the connections. The copper fittings allow the use of all commercial types of brazing materials for sweat connections, while the brass flare fittings eliminate flare nut creep due to temperature changes of dissimilar metals."

Dillon Thermometer Features 6-Ft. Stem

● Accurate measuring of temperatures in tanks, stacks, ducts, and other such vessels is possible with its new 6-ft. stem stainless steel Dillon thermometer, according to W. C. Dillon & Co., Inc., Dept. AHRN, 14620 Keswick St., Van Nuys, Calif.

"All units are ruggedly engineered to withstand pressures up to 3,476 p.s.i. and can be used for both liquids and gases," the company stated. "They are hand calibrated for accuracies within 1% of the full scale reading.

"Dillon 6-ft. stem thermometers are available in temperature ranges from 0-200 F. to 200-1,000° F.; also supplied in Centrigrade calibrations. Large 5-in. dial makes reading easy and positive. Other dial sizes are 1 5/32 in., 1 11/16 in., 2 5/16 in., and 3 in."

Also shown in the photograph is a tiny 2½ in. long stem instrument, indicating the wide range of the industrial thermometer line.

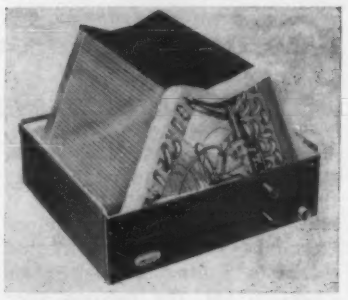
More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

3-Ton Add-On Cooling Coil Has Low Cabinet

● A new 3-ton "add-on" cooling coil featuring a low cabinet has been announced by Lennox Industries, Inc., Dept. AH&RN, 200 S. 12th Ave., Marshalltown, Iowa.

The low cabinet permits it to be added to an up-flow forced air furnace without adding much to the over-all height of the installation, the company said.

The "A" type coil projects up into the plenum space. Duct connection can be made at a lower level than is possible with conventional full-cabinet coil units, according to the company.



This unit is designed to fit the plenum openings of the popular-sized Lennox gas furnaces.

"The three-row coil has 3.44 sq. ft. net face area," the company stated. "It has rippled edge aluminum fins that are flat-bonded to seamless copper tubes. It has been tested underwater at 400 p.s.i.

"The cabinet has a baked enamel finish, ½ in. glass fiber insulation, mastic coated drain pan. A plenum access panel is furnished, also 'S' strips for plenum connection. It has been rated with a matching Lennox air-cooled condensing unit according to ARI standard 210-58."

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DRYSEAL

COPPER REFRIGERATION TUBE

When you flare DRYSEAL for compression fittings you'll save your temper and your time. It's because of the special temper and ductility. Bending dead-soft DRYSEAL is equally easy . . . do it by hand . . . no tools of any kind are needed. And when you get your DRYSEAL take a squint at those double-crimped ends. This is the final step in manufacturing, that immediately follows a special cleaning and dehydrating operation, which keeps dirt and moisture from entering the tube.

The seal is made in such a way that it does not change the diameter of the tube. This makes it possible to pass the tube through any opening large enough for the tube itself. Economical tube sizes range from ⅛" to ¾" O. D.

Also you'll find the job-size, 50-foot, one-coil pack easy to handle, light weight, economical and sturdily made to assure protection of the tube.

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Kansas City Group Sponsors PHCIB Selling Fundamentals Program

KANSAS CITY, Mo. — The Kansas City Industry Promotion Fund announced that it is sponsoring the Plumbing-Heating-Cooling Information Bureau's Selling Fundamentals Program for the heating contractors in Kansas City.

The program is being held over a 10-week period starting on June 2 at the Belerieve hotel in Kansas City, Mo.

Instructors for the program are Frank Babcock, executive secretary of the Mechanical Contractors Association of Greater Kansas City, and Lee Traner, business manager of Pipe Fitters Local No. 533, Kansas City.

Both attended the third Train the Trainer class held by the PHCIB to qualify industry representatives to conduct the Selling Fundamentals Program. This program has as its goal the improvement of contractor merchandising.

Although it is currently being conducted in over 55 cities, the Kansas City program will represent the first time it has been presented for a group of contractors primarily in the heating-cooling field, the announcement said. Assisting Babcock and Trainer in the program are representatives of wholesaler companies serving the Kansas City market area.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

June Climatological Evaluation Chart Gives '58 and '59 Ratings for 31 Cities

NEW YORK CITY—A climatological evaluation chart rating the air conditioning "sales climate" for 31 cities in June of 1959 compared to "normal" and to the like month of 1958 indicates that last June was fairly good.

The chart is one of four being published by the NEWS during this spring and summer. The charts comprise a climatological evaluation of air conditioning weather for the key months of 1959 (May through August) compared to normal and the corresponding month of the year 1958.

The evaluation has been made by Weather Trends, Inc., a private weather forecasting and weather-recording organization. It is being published with the thought that it will be of value to air conditioning industry members who are gearing promotional efforts to industrial markets.

Weather Trends placed ratings of 5 (superior), 4 (favorable), 3 (normal), 2 (unfavorable), and 1 (poor on the air conditioning "sales climate" for the 31 cities, and also provided a finer breakdown of the "normal" category, using 3— and 3+ as well as 3.

In addition, the air conditioning weather for each of the 31 cities during the period covered was rated as "much better," "slightly better," "better," "similar," "worse," "slightly worse," or "much worse" than in the corresponding month of 1958.

For last June, none of the cities got a "poor" rating and only two were rated "unfavorable." Two cities were rated as "superior," none as "favorable," and 18 as about "normal." Compared to 1958, 20 of them were rated as "better," "slightly better," or "much better"; three as "similar"; and eight as "worse," "slightly worse," or "much worse."

The 1 to 5 ratings are related to "normal" conditions based on long-term Weather Bureau records. Also reviewed and analyzed, and taken into consideration for the ratings, were such matters as:

1. Departures of average monthly temperatures, average maximum, and average minimum readings for each city and each month.
2. Number of days of 90° and over as compared to normal.
3. Duration and extent (extreme reading) of hot spells, if any, during each month.
4. A check on the number of wet days, humidity readings, and percentage of sunshine to normal to see if there were unusual departures from normal.

●

Climatological Evaluation

Legend for 1959: 5 — superior; 4 — favorable; 3 — normal; 2 — unfavorable; 1 — poor.

Legend — Comparison 1958: MB — much better; B — better; SB — slightly better; S — similar; MW — much worse; W — worse; SW — slightly worse.

Key City	JUNE, 1959 Compared to: Normal	1958
Atlanta	3	SW
Baltimore	4	MB
Birmingham	3	W
Boston	3—	SB
Buffalo	3+	B
Chicago	4	MB
Cincinnati	3	B
Cleveland	3	MB
Dallas	2	W
Denver	5	MB
Des Moines	3	B
Detroit	4	MB
Houston	3	SW
Indianapolis	3	MB
Kansas City	3	B
Los Angeles	3+	S
Memphis	3—	SW
Miami	3+	S
Minneapolis	4	MB
New Orleans	3	W
New York City	4	MB
Oklahoma City	2	W
Omaha	3	B
Philadelphia	4	MB
Phoenix	5	S
Pittsburgh	4	MB
Portland, Ore.	3—	MW
Raleigh	3	B
Richmond	4	MB
St. Louis	3+	MB
Washington D. C.	4	MB

Prepared by: Weather Trends, Inc., 550 Fifth Ave., New York 36.

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KLIXON MOTOR STARTING RELAYS*
. . . complete the combination required to start and protect compressor motor. Their positive action over a wide range of voltage and long life eliminates starting troubles.
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. . . give reliable temperature control unaffected by frost, moisture, altitude or cross-ambient effect . . . available for heating or cooling applications.
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. . . permit maximum safe compressor performance under overload conditions . . . shut the motor down when maximum allowable winding temperature is reached . . . automatically restart it when operation can be continued safely.

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Regardless of the type of hermetics you use in your cabinets, you can't beat the combination of a KLIXON Protector, Starting Relay, and Hermetically Sealed Thermostat to assure positive, dependable day in, day out operation of refrigeration equipment.

KLIXON Controls permit the compressor to operate safely at maximum capacity. They reduce costly service calls, repairs and replacements . . . help build product reputation and customer goodwill. Find out how you can provide greater product reliability by using KLIXON Refrigeration Controls. Write for information.

*Replacements are now available through distributors.

Over 200,000,000 KLIXON Controls are in use in refrigerating and heating equipment.

TEXAS INSTRUMENTS
INCORPORATED
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SPENCER PRODUCTS: Klixon® Inherent Overheat Motor Protectors • Motor Starting Relays • Thermostats • Precision Switches • Circuit Breakers

'Picture-a-Minute' Camera Saves Contractor Thousands of Dollars Annually In Claims

ATLANTIC CITY, N. J.—The use of a "picture-a-minute" camera by a local air conditioning contractor has saved him thousands of dollars annually.

"We were constantly being plagued by claims on the part of customers that our mechanics caused damage to their property while installing and servicing their air conditioning units," says Contractor Norman L. Hilton. "Many times these claims led to lawsuits, and it became an expensive time element in defending our part in these situations.

"By investing less than $100 in a new Polaroid-Land camera and accessories, we have not only overcome this entire situation but have also found this camera to be an excellent sales tool for us."

Before any type of installation work starts, whether it is a window unit or one that goes into the basement or outside of the home or place of business, Hilton examines the area where the work is to be performed, and if he finds any damage to the property in the vicinity, he photographs it.

Because it only takes a minute to have the picture completed and in his hand, he can take as many as he thinks necessary to show up any damages that exist prior to the time that his mechanics begin to work.

"We have had customers tell us that our mechanics cracked the window frames while installing window air conditioners, broke panes of glass, and did other damage to their walls and property while a window unit was being installed or removed," explains Hilton.

"When these claims were made against us, and we were able to show these customers the Polaroid prints we took, in many instances the customer let the matter drop.

"There have been several instances where we were taken into court, and the pictures that we showed were accepted as evidence of the damage before our mechanics began to work. At approximately 30 cents a picture, it is extremely reasonable for us to take three or four shots on a job."

Hilton has also taken 60-second pictures of how his men work for the same reason. They spread a heavy tarpaulin or canvas on the floor right in front of the window area and put their equipment and tools here.

This precludes the possibility of a customer claiming that the mechanics soiled or ruined the floor area right in front of the window where the air conditioning unit was to be installed, it was noted.

One customer claimed soil damage to a carpet in a room where a window air conditioner was installed. By showing a Polaroid picture of how the mechanics work, the customer was not able to deny that they did spread a protective covering on the floor while working, and the claim against this contractor was immediately dropped.

Picture-a-minute photography has also helped this contractor to sell additional air conditioning installations. He takes before-and-after pictures showing how neat, compact, and convenient an air conditioning unit can be installed.

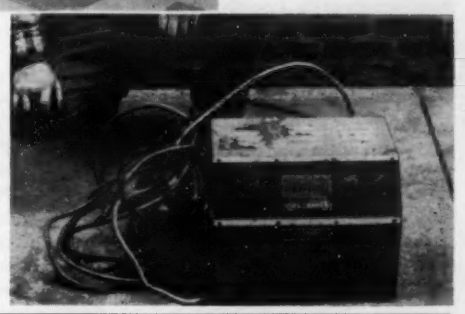
Many customers have exaggerated ideas of the amount of space that an air conditioner requires in the basement or storage area (if it is for an entire home) or how far out a window unit extends from the wall, it was pointed out.

By showing actual before-and-after photographs, customers are more easily convinced about the type of unit this contractor installs and it has helped him to make additional sales.

Hilton also uses his Polaroid camera to photograph damaged merchandise that he receives. This may have been defective prior to being packaged—or it may have been broken in transit.

When he complained about this to one of his sources of supply, they complained that this was not possible because of the careful manner in which they packaged their products. When he presented them with a Polaroid print of the damaged merchandise just as it came out of the carton, the source made good on the shipment.

NORMAN L. HILTON takes a picture in his showroom showing damage to arriving merchandise. This type of proof usually gets the supplier to approve his claim.

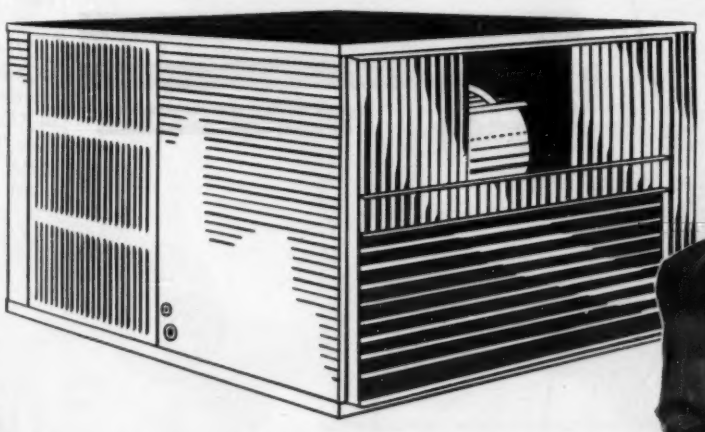


PHOTOGRAPH of a pipe thawer won a suit for Hilton when the court ruled that this piece of equipment could not have damaged fresh paint so that it had to be refinished.

NOW, from

WRIGHT-TEMP

The Incomparable
Wright-Temp Heat Pump



year-'round air conditioner

Wright Manufacturing Company is proud to announce an important addition to their complete line of fine-quality air conditioning equipment — the Wright-Temp Heat Pump. In 2, 3, 5, 7½ and 10 ton sizes — package and remote models to meet every installation requirement.

Famous Wright efficiency of design and quality of materials and workmanship assure you of increased customer satisfaction and fewer "trouble calls".

The Wright-Temp Heat Pump is built and tested in the Southwest specifically to meet the extreme demands of Southwestern climates. Balanced engineering provides maximum air conditioning efficiency at lower cost in even the most extreme weather conditions.

All Models Calorimeter Rated *Beyond*
A.R.I. Specified Conditions to 115°

For Complete Information write to

WRIGHT-TEMP
MANUFACTURING COMPANY
2902 West Thomas Road, Phoenix, Arizona
"Creating New Climates for Better Living"

Unfair Practices Stopped, But

NLRB Upholds Contractor In Right To Litigate Claims In State Court

WASHINGTON, D. C. — A Tallahassee, Fla. sheet metal contractor has been ordered by the National Labor Relations Board to stop discouraging membership in Local 57, Sheet Metal Workers International Association, AFL-CIO, and to offer five individuals reinstatement and back pay.

The NLRB ordered the contractor, Clyde Taylor Co., to:

1. Cease discouraging union membership by discharging employes because of their union membership, or by discriminating in regard to any term or condition of employment to discourage union membership.

2. Stop threatening to sue employes because they have filed unfair labor practice charges, or unless charges were dropped.

3. Cease from in any other manner interfering with, restraining, or coercing employes in their rights to engage in or refrain from concerted activities.

4. Offer reinstatement to five individuals, and back pay for losses suffered from the date of the discrimination to the date of offer of employment or reinstatement, less net earnings during said period and less any sums received under the settlement agreement with Raymond Diehl Co., the former owner.

At the same time, the NLRB dismissed the complaint insofar as it alleged that the company violated Section 8 (a) (1) of the National Labor Relations Act by threatening to file a civil action against the charging parties in the event they testified in this unfair labor practice proceeding and by obtaining a State court injunction banning picketing.

By this dismissal, the NLRB pointed out, Chairman Boyd Leedom and members Philip R. Rodgers, Stephen S. Bean, and Joseph A. Jenkins overruled the *W. T. Carter* case (90 NLRB 2020) insofar as it held that an employer violated the Act by obtaining a State court injunction.

They agreed with the view expressed by former NLRB Chairman Herzog in his dissenting opinion in the Carter case that the board should accommodate its enforcement of the Act to the right of all persons to litigate their claims in court, rather than condemn the exercise of such right.

In relating the facts which gave rise to the case, as found by Trial Examiner George A. Downing, the NLRB noted that Diehl, a mechanical contractor, decided in April 1958 to retire from that business. In doing so, Diehl made an arrangement with Taylor, then superintendent of Diehl's sheet metal department, to take over that business on May 19, 1958.

However, the board said, the agreement was not consummated as planned for on that day, Taylor and Local 57, which had had a contract with Diehl, failed to reach agreement on a new contract.

"For that reason," the board stated, "Taylor told Diehl that he, Taylor, could not at that time go into the sheet metal business. As Diehl had unfinished sheet metal jobs on hand, Diehl agreed, in substance, to disregard Taylor's verbal agreement to take over the sheet metal business and, on May 28, 1958, Diehl signed a new one-year contract with Local 57.

"Nevertheless, Diehl desired to retire from the sheet metal business as soon as possible. As in the past, Diehl continued to give Taylor a free hand in running the sheet metal department. On Aug. 1, 1958, Taylor signed a lease, to take effect on Aug. 18, 1958, for Diehl's building and equipment.

"On Aug. 8, 1958, Taylor discharged Frank Houston, Local 57 steward, who had participated in the unsuccessful bargaining negotiations with Taylor and in the contract negotiations with Diehl in Taylor's presence. In his capacity as union steward, Houston had presented grievances concerning Taylor's alleged hiring of too many apprentices and his use of unqualified laborers.

"According to testimony credited by the trial examiner, shortly before Houston's discharge, Taylor told an employe: 'Frank Houston was getting too big for his own good in this union business and it looked like he was going to let him go.'

"On Friday morning, Aug. 15, 1958, according to testimony credited by the trial examiner, Taylor told the sheet metal employes in substance that he was taking over the shop on the following Monday morning and that the employes could continue to work for him unless 'they wanted to stick with the union.'

"At the end of the workday, the four remaining complainants . . . having indicated adherence to the union, were told, when they received their pay envelopes, that they were paid up in full and 'to get their tools and get out.' "

Late in August, some six employes picketed Taylor's jobs in protest of the alleged discriminatory discharges. In September, Taylor secured an injunction against picketing. Later, four of the discharged employes filed unfair labor practice charges against Taylor.

Feature for Feature...

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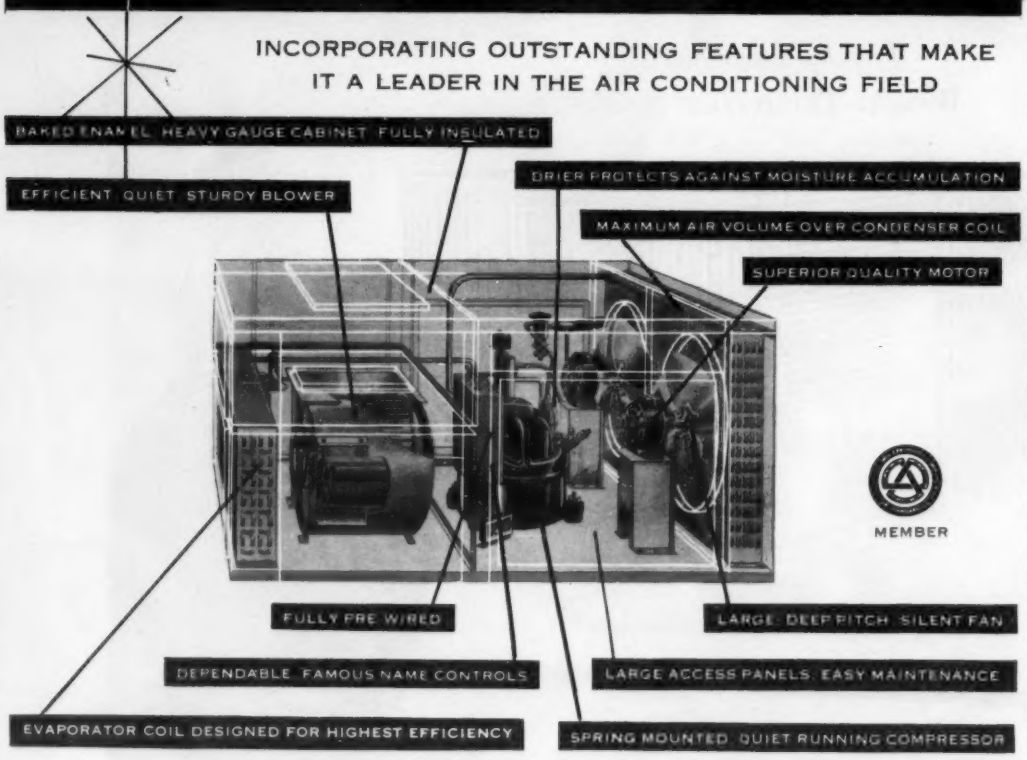
INCORPORATING OUTSTANDING FEATURES THAT MAKE IT A LEADER IN THE AIR CONDITIONING FIELD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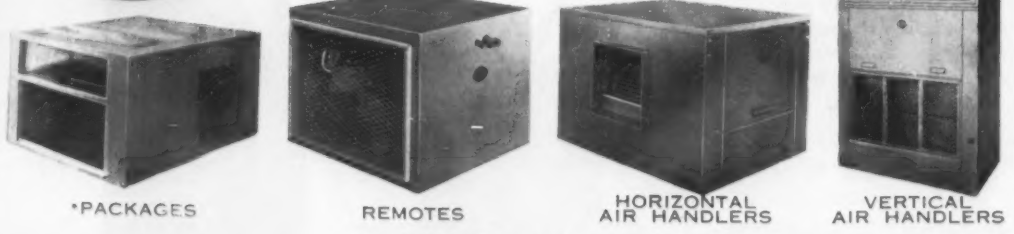

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FOR INFORMATION WRITE:

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AT LAST A LIGHTWEIGHT LIFT

for the installation and servicing of Air Conditioners in transoms, and ceiling cooling and heating units

WEIGHS ONLY 50 POUNDS

MODEL "C" (shown)

Height ..... 7'
Width ..... 3'
Depth ..... 26"

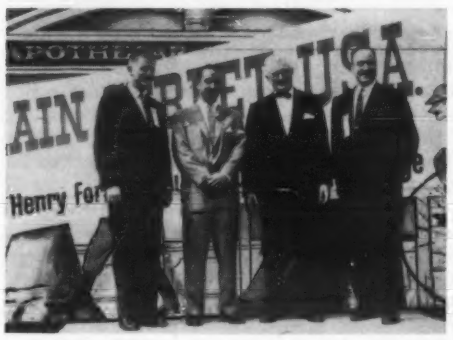
Will raise units up to 30" wide nearly 9 feet. OTHER MODELS AVAILABLE.

ALUMALIFT

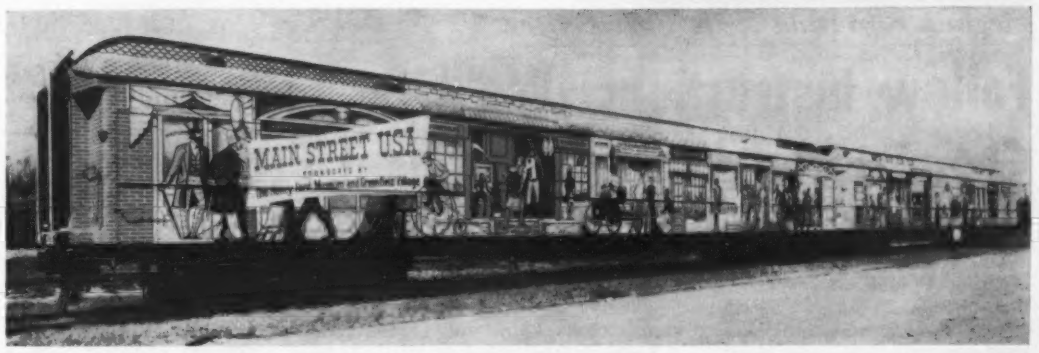
LIGHTWEIGHT • INEXPENSIVE • PORTABLE • EFFICIENT

AMBLE MFG. CO. INC.
157-06 N. BLVD.
FLUSHING 54, N. Y.

Two men can install transom units safely. One man service. Contact your local distributor or write us.



REPRESENTING the warm air heating and air conditioning industry in the traveling "Main St. U.S.A." exhibit (r.) is American-Standard Air Conditioning Div. Pictured at dedication ceremony (l.) are (l. to r.) William P. Sheehan, division advertising and sales promotion manager; William Clay Ford, president of Henry Ford Museum and Greenfield Village; F. H. Mueller, U. S. Secretary of Commerce; and Clyde H. Wilkinson, div. president.



American-Standard Air Conditioning On View In 'Main St. U. S. A.' on Rails

NEW YORK CITY — 20th Century Americans will have the opportunity of "Window-shopping 19th Century America"—at their railroad stations.

Under the sponsorship of the Henry Ford Museum and Greenfield Village of Dearborn, Mich., and co-sponsored by American-Standard and 26 other manufacturers, a travelling exhibition started a 5-year tour of the United States in Albany, N. Y. on May 4.

During this 5-year period, it will visit approximately 40 major areas per year and it is anticipated that the exhibit will be viewed by more than 5 million persons.

The exhibit will be in Buffalo from June 8 to 13. Then it will move to Greenfield Village for the summer, remaining there from June 15 to Sept. 12.

In two specially-designed railroad cars (donated to the exhibition by The Chesapeake & Ohio Railway Co.) the Henry Ford Museum has constructed a 19th Century Street of Shops —the windows of which will be filled with the merchandise that was purveyed during the 1800's.

Completely authentic, the hundreds of items to be displayed are all originals from collections of the Henry Ford Museum.

Directly opposite will be the ultra-modern exhibits of 27 of the country's top manufacturers in fields from air conditioning to greeting cards. Entitled "Main Street U.S.A.," the exhibition is based on what is probably the Museum's most popular feature; its famous street of Early American Shops.

Among the modern exhibits will be one by American-Standard Air Conditioning Div. depicting the benefits of year-round comfort available from the local heating and air conditioning contractors.

According to C. H. Wilkinson, president, American - Standard Air Conditioning Div., "Our basic purpose in joining as one of the sponsors in this display train is to pay tribute to the local warm air heating and air conditioning contractor. We want everyone in the United States to know that he is the world's greatest expert in comfort.

"Our exhibit is designed to show exactly what this comfort consists of in the way of controlled temperature and humidity, with pure filtered air gently distributed to every room in the home."

"Main Street U.S.A." will do more than express appreciation to the Retail Merchants of the country, the announcement said. "It will serve as a peg for local 'Merchants' Week' celebrations. It is anticipated that most exhibition cities will have week-long promotions, special sales, banners in all merchants' windows, and all the other programming which goes along with an important city-wide activity."

The train will stay approximately one week in each exhibition city. There is no charge for admission. With the exception of the first day, the exhibition will be open to the general public of the area including school students who will attend en classe accompanied by their teachers.

The opening day in each city will be termed "Merchants Preview Day." At that time, by invitation, all the merchants and business leaders will be invited to view the exhibition. Also invited will be the representatives of the press, radio, and television and community leaders.

Mechanical Contractor Starts New Building

GREENVILLE, S. C.—Construction of a new warehouse and shop for Davis Mechanical Contractors, air conditioning firm, has started on U. S. Highway 276 at a cost of $260,000 including equipment and fixtures, according to J. W. Davis, president.

The new location will have 60,000 sq. ft. of space.

NEW FROM WILCOLATOR

Wilcolator has originated a new and simpler method of calibrating its Model G thermostats. In the event that it is ever needed, field calibration can be accomplished faster and more accurately than ever before.

All that is required is that the dial be removed and the setscrew adjusted in the hollowed center shaft. No disassembly of the thermostat is required, since adjustment is made from the front. This easier method of field calibration not only makes greater accuracy possible, but saves valuable time for all concerned.

Wilcolator G thermostats, both single and double pole, are the highest rated, most compact low-cost thermostats on the market. They are designed for every heating and cooling application and are UL listed and approved.

Write today for complete information on the Wilcolator line of G controls.

Thermostats for Every Heating and Cooling Application

THE Wilcolator COMPANY

THE WILCOLATOR COMPANY
1001 NEWARK AVE., ELIZABETH, N. J.
Subsidiaries and/or affiliates in
Canada, Great Britain, Italy, Western Germany, and Australia

Virginia Smelting Tells Servicemen

Follow Instructions: We'll Be Your Chemists on Water Treatment Problems

By Frank J. Versagi

DETROIT — "Effective water treatment and scale removal does not call for your being chemists; you need only follow the carefully prepared instructions we make available to you, and the chemicals we have developed will do the rest," Detroit RSES members were told by Vince Klucz, field engineer, refrigeration sales, Virginia Smelting Co. "Don't make the common mistake of reading instructions only after everything else has failed."

Preceding his discussion of treatment procedures with a review of water problems, Klucz listed three types of water problems: 1) scale, 2) corrosion, and 3) slime and algae.

Scale is the mineral deposit from evaporated water.

"A rule of thumb figure is 1.8 gallons of water evaporated per ton per hour," Klucz said. "But only water evaporates; the minerals in it do not. Make-up water brings in more impurities, and the concentration builds up until they begin to deposit on hot surfaces especially." Proper water treatment and handling can increase the concentration of permissible impurities before deposits begin.

In the early years, according to the Virginia Smelting representative, metaphosphates were used. "These dissolve rather rapidly and had to be proportion-fed for most effective results. Now the glassy polyphosphates, because they are not so readily soluble, can be used directly in the system without expensive metering devices. These polyphosphates will increase the amount of solids which the water can retain by several times, depending on temperature.

Effect of Scale or Algae Foul-Up

Virginia Smelting uses charts and two examples to illustrate the effect of scale or algae on condensing systems.

1. On a refrigeration system with normal conditions of 20° evaporator and 104° condenser, suppose scale or algae interfere with heat transfer so that condensing temperature rises 12° to 116°—under these new conditions, capacity drops 10% and electrical current consumption increases 9%.

2. On an air conditioning system with normal conditions of 40° evaporator and 104° condenser, suppose scale or algae interferes with heat transfer so that condensing temperature rises only 8° to 112°—under these new conditions, capacity drops 5.2% and current consumption goes up almost 10%.

"But there is still an upper limit of impurity concentration; therefore it is necessary to waste some water with bleed-off. While there may be psychological objections to wasting some water, it is a simple matter to show the desirability and practical economics of so doing," Klucz insisted.

As an example, he cited a 30-ton condenser with no cooling tower. At the recommended rate of 1.5 g.p.m. per ton, such a unit wastes 45 gals. a minute, 2,700 gals. an hour. With a cooling tower installed, water consumption is 1.8 gal per **hour** per ton or only 54 g.p.h. Bleed-off, according to Klucz, is about twice the evaporation rate or 108 g.p.h. for a total of 162 g.p.h., compared to 2,700 gals. when no tower is used. "Only 6% of the water wasted without a tower is consumed with proper tower and bleed-off.

"If you aren't going to use bleed-off, don't waste your time and money treating the water," the speaker insisted.

Reviewed Scale Removal Methods

Klucz reviewed the methods for removing scale once it has formed. In his review, he stated that the dry-type, sulfamic acid-base, cleaners are by far the safest to use—both for personnel and for equipment. The liquid cleaners, hydrochloric acid-base, are faster and cheaper, but more potentially harmful to equipment and personnel. He warned against some cheaper dry compounds which "are adulterated with strong additives that can be as strong as the liquid type once they are in solution."

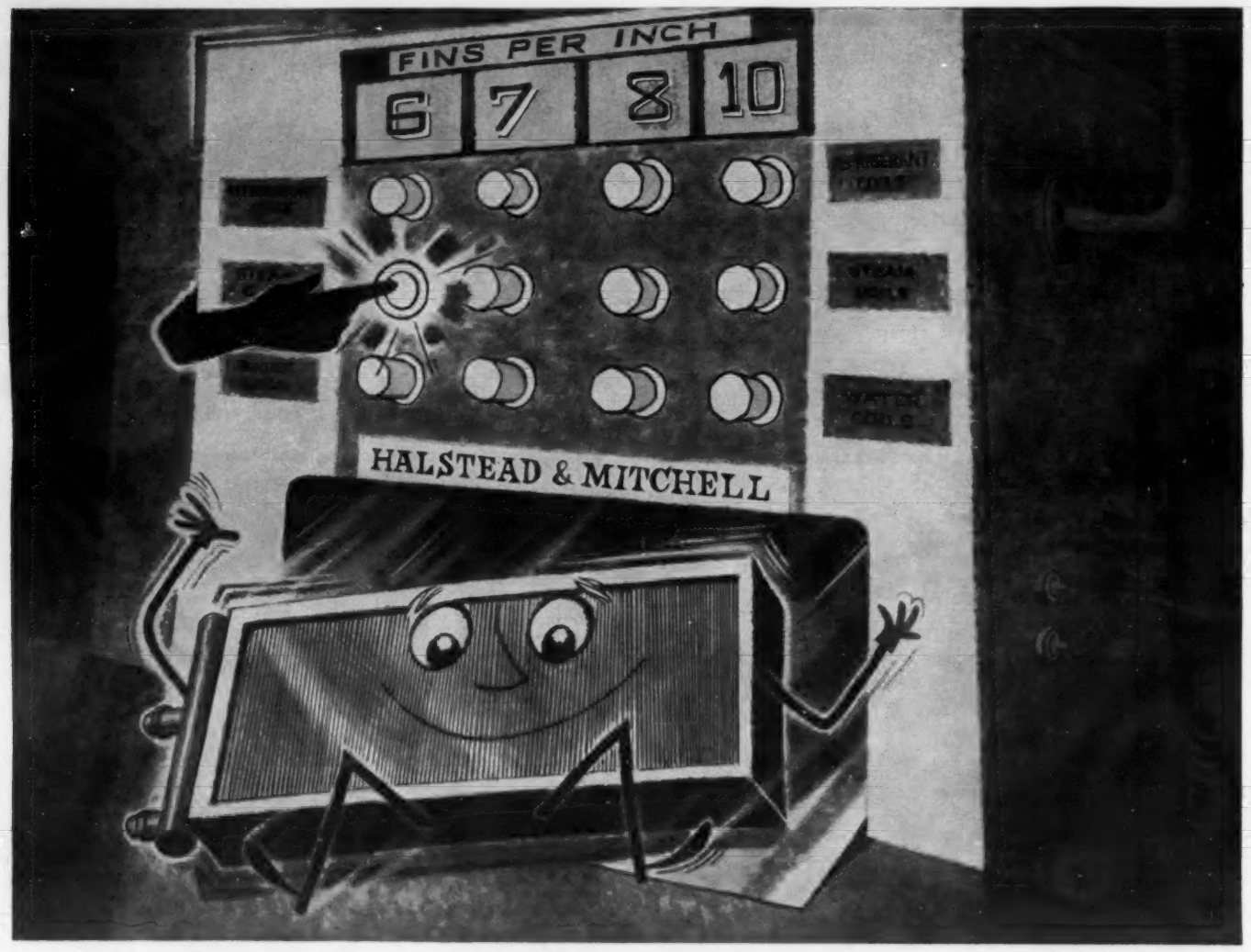
Corrosion may be due to acid water, to pickup of aggressive impurities from the air, sometimes to oxygen pickup.

A frequent cause of corrosion, even when the supply water is non-aggressive, is the location of a chimney near the air-intake side of the tower, Klucz showed. Or the tower may be located downwind from pollution-producing factories. The water washes these pollutants out of the air and becomes corrosive.

Galvanic Corrosion

Touching briefly on galvanic corrosion, the electrolytic type of corrosion due to the coupling of dissimilar metals—as brass and galvanized steel, Klucz commented that this type of corrosion can readily be identified since it almost always occurs in a localized area, at or near the galvanic couple. In contrast, other types of corrosion, due to aggressive water, take place throughout the entire system.

Whereas **scale control** with polyphosphates can be obtained by chemical concentrations on the order of 2-4 parts per million, **corrosion control** calls for about ten times that amount, or 20-40 ppm of polyphosphate, Klucz stated. "It is normally necessary to increase water treatment and reduce bleed-off to control corrosive conditions. While polyphosphates are effective against oxygen or small amounts of acid, they will not handle the situation if the pH of the water is below 6. Nor



BEFORE YOU BUY, THINK:

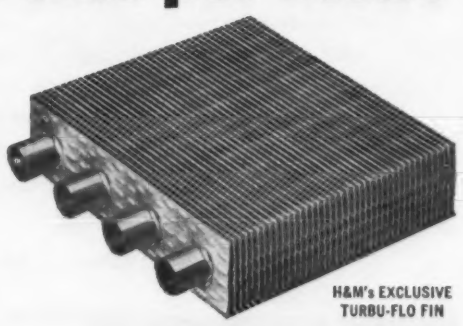
Do you need 6, 7, 8 or 10 fins per inch?

Halstead & Mitchell supplies Turbu-Flo Coils with the fin spacing you want

Why accept someone else's "standard" when your own judgment dictates another fin spacing for the specific job at hand. Now you can call on Halstead & Mitchell for Turbu-Flo coils with 6, 7, 8 or 10 fins per inch to meet your individual size requirements.

H&M makes coils for use with most refrigerants, steam (standard or non-freeze coils), hot or chilled water. All coils are available from 1 to 8 rows deep, with finned heights of 12 to 36 inches, and finned lengths up to 10 feet. Aluminum fins on seamless copper tubing are standard, though copper fins may be ordered. Casings come in heavy gauge galvanized steel or aluminum, with connections for left or right hand.

When perfect performance depends on correct design, specify H&M coils. Ask your wholesaler for complete information or write to Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.



H&M's EXCLUSIVE TURBU-FLO FIN

HM Halstead & Mitchell

Finned Coil Products • Air-Cooled Condensers • Water-Cooled Condensers • Cooling Towers

Water Treatment Suggestions--

will chromates, the other popular compounds for controlling mild corrosion. When the pH is below 6, recourse must be made to strong alkali substances, and it is wise to get help from us or other water treatment experts for such conditions."

Slime and algae are living growths; slime is bacteria and is usually found on indoor towers because the bacteria like dark areas; algae are the familiar green mossy plants often seen on stagnant ponds. These latter organisms like sunshine so are usually found in outdoor systems. Both types of growth can clog condensers or bake on evaporative condenser tubes.

Slime and algae need food for continue growth; for this reason, many growths are found in supermarkets where food odors carry small particles to the organisms. Similarly, sizing and glue from paper and cardboards as found in printing shops or warehouses can supply enough food to keep the organisms thriving. In one city, several outdoor cooling towers downwind from a malt handling operation all had chronic problems with algae.

Klucz listed four types of algaecides: copper salts, chlorine-containing compounds, pentachlorophenates, and quaternary ammonium salts. Copper and chlorine bearing materials are corrosive, so that continued use of such materials could have harmful effects on equipment, he suggested. Organic copper compounds tend to overcome this objection.

Quatenary ammonia materials are very expensive; they are used only where non-toxicity is mandatory—as in air washers where the air is recirculated into occupied areas. The other three types of materials are all toxic to one degree or another, he said.

Pentachlorophenates offer the newest approach to removing green growth, according to Klucz.

"Algaecides are always supplied as shock treatment—to get rid of what is there. Airborne contamination can recontaminate the water in time. Where slime or algae is a problem, the only solution—barring any way to remove the source of food, say—is periodic treatment to remove growths. Once a month may be enough in some areas; more frequent treatment may be needed in other areas; and there are fortunate spots where living organisms are no problem at all."

Jarrow Ups Production Facilities 30%

CHICAGO—A 30% increase in production facilities was recently completed at Jarrow Products, Inc. to keep pace with the stepped up demand for "Identi-Line," identical refrigerator door replacement gaskets, the company announced.

Since moving, two years ago, to the present plant at 1238-50 W. Fullerton Ave. here, productive capacity on all the firm's lines has doubled, it was stated.

"The Identi-Line program enables servicemen to order correct refrigerator door replacement gaskets directly, by model number, from their local wholesaler," the company pointed out. "A new 44-page pocket-size guide, 'Key Chart ID-501,' provides servicemen with a shortcut to identification of the right gasket for each job."

Company Vice President Myles A. Jarrow said that with the new facilities the company plans to ship stock items within 72 hours of receipt of order.

Leo E. Starr Retires

SYRACUSE, N. Y.—Leo E. Starr, a 32-year veteran of ship air conditioning and 37-year veteran in the refrigeration and air conditioning field, has retired as manager of the Marine Dept. of Carrier Corp.

Next WIA Meeting Set For April 14-16, 1961

OLYMPIA, Wash.—The 12th annual conference of the Western International Association of Refrigeration Service Engineers Society next year will be held in Boise, Ida., April 14-16.

Harold W. Lewis of Ephrata, Wash., secretary of WIA, reported these new officers:

President Clarence Teasley of Tacoma; Vice President Allen Kidd of New Westminister, B. C.; Secretary Harold W. Lewis; Treasurer Ray Crook of Yakima, Wash.; Sergeant-at-arms Maurice Smith of Tacoma; and Educational Chairman Edward Arthur of Tacoma.

H & H Tube Names Cameron

DETROIT—H & H Tube Mfg. Co. here has announced the appointment of John J. Cameron as its Quality Control Dept. supervisor.

Pittsburgh Plate Glass Forms Marketing Section, Realigns Fiber Glass Staff

PITTSBURGH—Formation of a marketing section and realignment of management personnel in the fiber glass division of Pittsburgh Plate Glass Co. has been announced by R. A. McLaughlin, division general manager.

According to McLaughlin, the division's new organization plan enables the company to better serve the expanding fiber glass sales markets and provides for subsequent expansion of the sales and marketing operations.

Principal functions of the new marketing section include market evaluation and development of products to fit these markets and correlate development activity with the research and production departments.

P. Dudley Kaley, formerly manager of sales, has been named director of marketing and sales. He has been associated with Pittsburgh Plate in several sales positions since 1952 when the company organized its fiber glass division.

A. W. Stevenson, formerly district sales manager in New York City since 1954, has been transferred to the company's Pittsburgh general office to succeed Kaley.

Orville Miller, Jr., who had served as manager of superfine products, sales, has been appointed manager of marketing.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

FIND·FIX
Refrigerant* Leaks
FAST
with the
PREST-O-LITE
Trade Mark

Refrigeration and Air-Conditioning Outfit

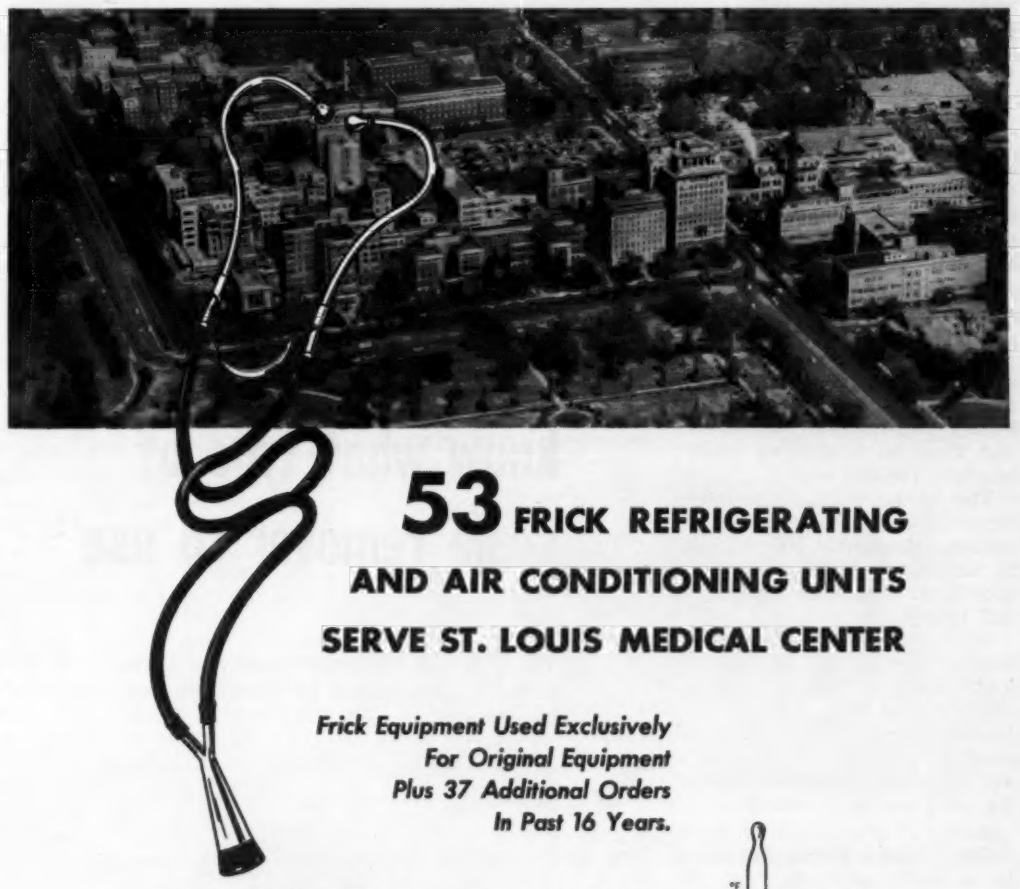
This one handy, compact outfit is all you need to find and fix refrigerant gas leaks. Sensitive leak detector "sniffs" as little as 100 parts of halide refrigerant* in a million parts of air . . . *in seconds*, pinpoints leaks too small to show up in soapy water. Also included in the outfit are 3 sizes of torch stems for open-flame soldering, heating, and brazing; an adjustable gas pressure regulator; interchangeable torch handle; hose; enameled steel carrying case. Models for use with B or MC PREST-O-LITE acetylene tank.

*ASRE numbers 11, 12, 13, 14, 21, 22, 113, 114

$43.00 COMPLETE

PREST-O-LITE air-acetylene equipment and small tanks are available from your local supplier of LINDE products. See him today. Or write for further information to: Dept. 624, LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd St., New York 17, N. Y.

"Prest-O-Lite," "Linde," and "Union Carbide" are registered trade marks of Union Carbide Corporation.



53 FRICK REFRIGERATING AND AIR CONDITIONING UNITS SERVE ST. LOUIS MEDICAL CENTER

Frick Equipment Used Exclusively For Original Equipment Plus 37 Additional Orders In Past 16 Years.

• The Barnes Hospital-Washington University Medical Center in St. Louis is a good example of the dependability and versatility of Frick refrigeration and air conditioning equipment. Since 1944, when the first unit of Frick equipment was installed, 37 repeat orders have raised the number of Frick units to 53.

Today, 13 "ECLIPSE" compressors, 29 low pressure units, and 11 unit air conditioners are in service.

The medical center facilities themselves have expanded to include eight hospitals with nearly a thousand beds, schools of nursing, dentistry, and occupational therapy . . . clinics, laboratories, lecture rooms, and libraries.

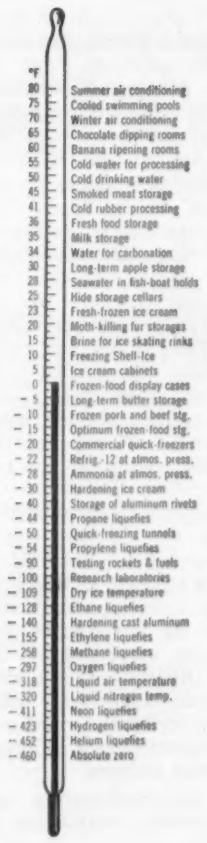
All of the air conditioned operating rooms are provided with 100% fresh air which is filtered electrically. The main kitchens, cafeteria and dining rooms are all air conditioned with Frick equipment. All cooler and freezer units are automatically defrosted. Some units maintain temperatures from 0° to 100° F., with varying humidity control.

In some special research projects, dual refrigeration equipment with indicating red lights has been installed.

If your interest is industrial or institutional refrigeration or air conditioning, a Frick engineer will be happy to discuss it with you at no obligation.

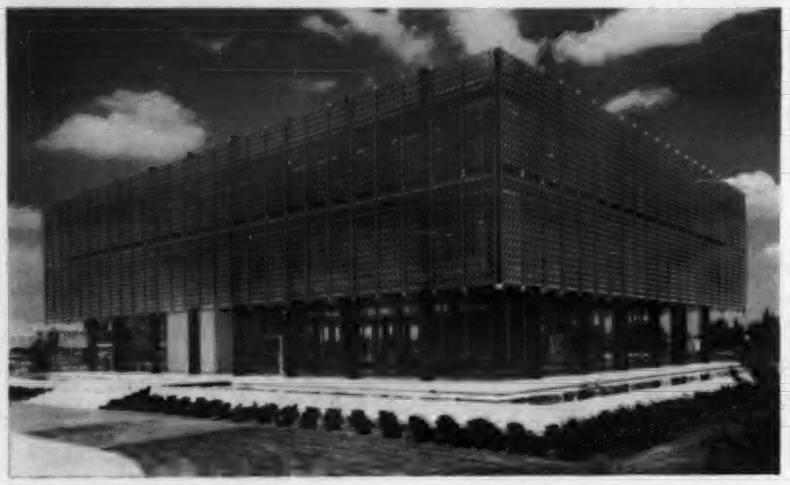
FRICK COMPANY
Waynesboro, Pennsylvania

FRICK


°F
80 Summer air conditioning
75 Cooled swimming pools
70 Winter air conditioning
65 Chocolate dipping rooms
60 Banana ripening rooms
55 Cold water for processing
50 Cold drinking water
45 Smoked meat storage
41 Cold rubber processing
36 Fresh food storage
35 Milk storage
34 Water for carbonation
30 Long-term apple storage
28 Seawater in fish-boat holds
25 Hide storage cellars
23 Fresh-frozen ice cream
20 Moth-killing fur storages
15 Brine for ice skating rinks
10 Freezing Shell-Ice
5 Ice cream cabinets
0 Frozen-food display cases
– 5 Long-term butter storage
– 10 Frozen pork and beef stg.
– 15 Optimum frozen-food stg.
– 20 Commercial quick-freezers
– 22 Refrig.-12 at atmos. press.
– 28 Ammonia at atmos. press.
– 30 Hardening ice cream
– 40 Storage of aluminum rivets
– 44 Propane liquefies
– 50 Quick-freezing tunnels
– 54 Propylene liquefies
– 90 Testing rockets & fuels
– 100 Research laboratories
– 109 Dry ice temperature
– 128 Ethane liquefies
– 140 Hardening cast aluminum
– 155 Ethylene liquefies
– 258 Methane liquefies
– 297 Oxygen liquefies
– 318 Liquid air temperature
– 320 Liquid nitrogen temp.
– 411 Neon liquefies
– 423 Hydrogen liquefies
– 452 Helium liquefies
– 460 Absolute zero

Unusual Air Conditioning System for

Aluminum 'Jewel on Stilts'



LEFT: EXTERIOR of Reynolds Metals office building in Detroit is guarded by gold anodized aluminum rings that shield the second and third floors from direct sunlight.

RIGHT: INTERIOR of lobby floor indicates light and spaciousness of building. Open center court is topped by domed skylight that floods interior with daylight.

Gold Solar Screen Plus Drapes Halve Cooling Requirements

DETROIT — A building designed to be unique generally requires the unusual in air conditioning and heating. The new Great Lakes region sales headquarters for Reynolds Metals Co. is no exception.

The distinctive aluminum and glass office building was designed as a "jewel on stilts." Its purpose was two-fold: **One,** as a display piece to focus the attention of Detroiters on the beauty and utility of aluminum, and **Two,** as a working headquarters for the region.

The three-story aluminum structure cost approximately $2 million. Measuring 105 by 135 ft. and 50 ft. high, it contains 45,500 sq. ft. and accommodates 115 people.

The aluminum and glass walled first level encloses a lobby which is basically a huge display area in a tropical setting of trees and plants. It is used for displays of Reynold's and customers' products depicting progress in aluminum.

Lobby is dominated by a 30 by 60-ft. royal purple rug inset in a white terrazzo floor. It forms the bottom of an open court topped by an immense arched skylight that floods the interior with daylight.

Around the open court, on the second and third floors, are offices separated by movable partitions. Corridors face the court.

Outstanding feature of the building is an exterior screen of gold anodized aluminum rings that shields the second and third floors from direct sunlight. The screen reflects solar heat and cuts off rays of the sun until they are at a very low angle.

Together with interior drapes, the screen has cut air conditioning requirements in half, it is reported.

The sun screen accounts for 44,300 lbs. of the 200,000 lbs. of aluminum employed in the structure. Other uses for aluminum include furniture, office equipment, skylight, formed pan ceilings, column covers, railings, gratings, and louvers.

In the air conditioning and heating system, aluminum is

One in a series of interviews with the men who are "Virginia"

"When removing scale with chemicals it's pretty important to know what type of scale remover to use"

The merits of "Virginia" Solid and Liquid Scale Removers are discussed by Elbert Brower, "Virginia" water treatment specialist.

Elbert Brower, field engineer, Virginia Smelting Company

Q What would you say are the essential differences between "Virginia" Solid and Liquid Scale Removers?

A Any difference in the two types can be expressed in terms of relative safety, speed and cost. Many operators feel that the added cost of the solid product is more than justified because of its safety and ease of handling and because it is less corrosive to certain metallic parts. Other operators like the economy and speedy action of the liquid and are willing to take the necessary precautions in the use and handling of it.

Q Just what is the chemical composition of "Virginia" Solid Remover?

A "Virginia" Solid Remover contains about 96% sulfamic acid. The other ingredients include special inhibitors that have been added to reduce the attack on copper, iron, steel and aluminum. Diluents such as sodium acid sulfate are never used because they have been proved ineffective and may even impair the cleaning efficiency of sulfamic acid.

Q What is the chemical description of "Virginia" Liquid Scale Remover?

A "Virginia" liquid is a blend of hydrochloric acid and metal protecting inhibitors. It is non-fuming. One gallon of it dissolves 3 pounds of scale. Under favorable conditions its attack on metals, even galvanizing, is very slight. I said "Virginia" liquid is non-fuming, and that's an important point. Hydrochloric acid fumes are not only corrosive to metals, but they are a health hazard to persons exposed to them.

Q When should the solid remover be used and when should you use the liquid?

A When protection to equipment is the first consideration, or when descaling must be done indoors, "Virginia" solid should be used; I'd like to emphasize this—if aluminum equipment is involved, always use the solid type. "Virginia" liquid has advantages for removing extra-heavy scale deposits and certain kinds of scale that are resistant to chemical removal.

Q Are some kinds of scale harder to remove than others?

A Yes. I just referred to resistant or so-called problem scales. Carbonate scales, for example, are easily and quickly dissolved. Rust scales, sulfate and silica scales have increasing resistance to chemical removal in the order mentioned. They do, however, respond when the proper pre-treatment is applied. These pre-treatments are covered in detail in our instruction manual, titled "Water Problems and How to Correct Them." A copy will be sent free to anyone who requests it.

Q How can the user tell what kind of scale he has to deal with?

A Well, it's easy to identify carbonate scale. Simply chip off a small piece, drop into a solution of solid or liquid remover. It should give off bubbles of gas rather violently. Sulfate or silica scales will remain virtually inactive—no bubbles. If in doubt, the best thing to do is send a scale sample to our laboratory for analysis. May I add two suggestions here? Never start a descaling job until all dirt and trash are cleaned out of the sump or water tank and never leave an acid cleaning solution in the system longer than 10 hours. Drain out the spent solutions and start again next day with fresh chemicals.

For free folder, "How to Turn Water into Money," write Refrigeration Division, VIRGINIA SMELTING COMPANY, 176 Jefferson St., W. Norfolk, Va.

WATER TREATMENT CHEMICALS • ESOTOO • V-METH-L • CAN-O-GAS • VASCOCEL
PRESSTITE TAPE • PERMAGUM • SUNISO REFRIGERATION OILS
NATIONAL SALES AGENT & REPACKER FOR DU PONT'S "FREON" REFRIGERANTS

used in all high pressure and low velocity ducts with the exception of underfloor ducts and airfloor forms. It is also employed in grilles, registers, ceiling diffusers, thermostat covers, and convector front enclosures.

Design cooling load for the building was approximately 170 tons of refrigeration. Heating and ventilating load was estimated at 3,000,000 B.t.u.h.

Refrigeration is provided by a Carrier absorption water chiller of 200 tons' capacity. Heat is supplied by "Lo-Blast" gas burners supplied by Mid-Continent Metal Products Co.

Air distribution system for the sales and office floors is a dual duct design, consisting of a cool air duct, a warm air duct, and constant volume mixing boxes.

Shape of the mechanical equipment room in the basement (comparatively long and narrow L-shape) location of the two air shafts, and maximum duct diameters that could fit in the furred ceilings over the corridors around the central court, made it necessary to utilize two fan systems.

One fan system, according to Edwin G. Siegel, chief mechanical engineer for Minoru Yamasaki & Associates, architect and engineer, supplies air to the zones along the north and west walls.

The second fan system supplies air to the zones along the east and south wallls. Combined capacity of the two Sturtevant fans is just over 40,000 c.f.m.

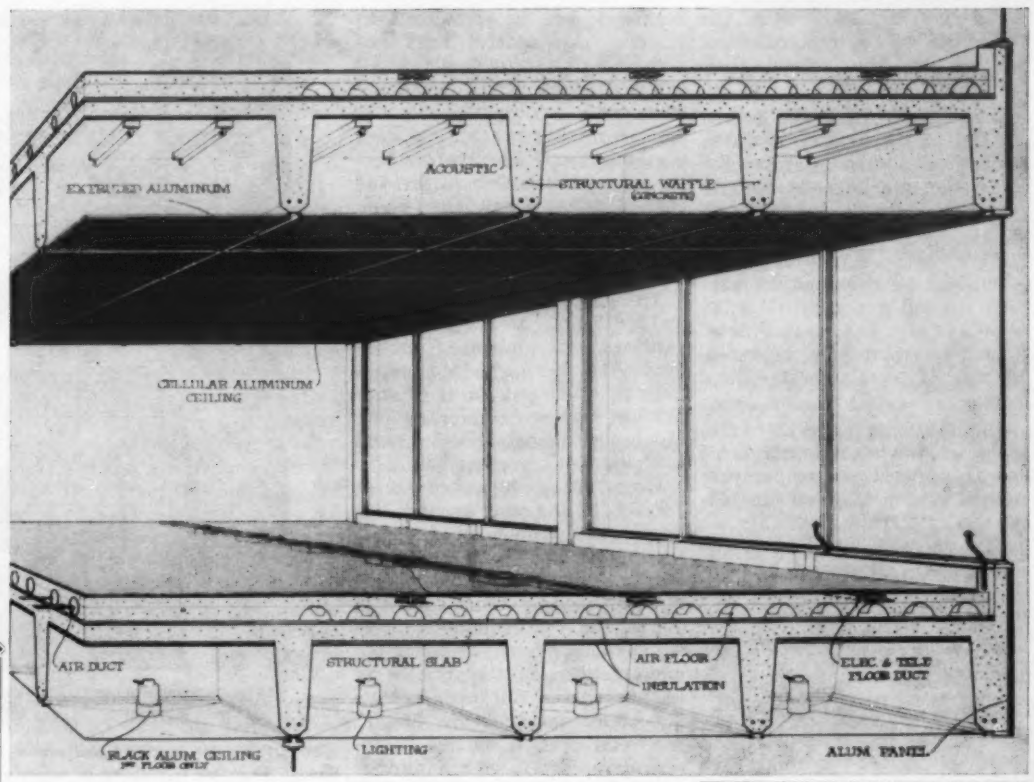
Each fan discharges through an "Aircoustat" sound attenuator. Leaving the attenuator, the air is blown through either a bank of Trane steam distribution coils for heating or Marlo spray coils for cooling and dehumidification.

Horizontal cool and warm air duct headers run at the basement ceiling and rise inside the return air shafts.

First floor is supplied by dual duct branches that connect to duct headers in the basement and extend around the periphery of the building and at the basement ceiling. Air is discharged through Titus floor registers spaced at 10-ft. intervals.

Exterior zone on the second floor is 15 ft. deep and is supplied from horizontal branch ducts which are located in the first floor furred ceiling space that is continuous around the open central core area. The Connor mixing boxes are also located here.

A low velocity duct connects to the outlet of each mixing box, rises through the structural slab, extends horizontally on top of the structural slab, and connects to the air floor system.



SECTION THROUGH BUILDING shows waffle shaped construction of floor, use of airfloor to distribute air, and location of registers under windows.

The structural slab is another unusual feature of the building. It forms a 5-ft. square waffle pattern that serves as lighting trough for the luminous ceiling.

Vaulted sheet metal forms 3½ in. high are installed on the structural slab and serve to distribute the air supply to the exterior zones. A lightweight concrete fill above the sheet metal forms contains the underfloor electrical and telephone ducts.

The underfloor duct, the same height as the sheet metal airfloor forms, is insulated on top and sides to reduce radiant heat gain through the floor.

The underfloor duct passes beneath the interior zone which requires year-round cooling. Additional heat gain from the underfloor ducts, radiating into the interior zone, would have required a greater cooling capacity during the heating season than during the cooling season, Siegel commented.

The airfloor distributes the air to floor registers located at the window wall and spaced on 5-ft. centers.

Exterior zone on the third floor and interior zone on the second floor are supplied from common horizontal branch ducts and mixing boxes located in the second floor furred ceiling space. Third floor exterior zone is supplied in the same manner as the second floor exterior, just described.

Second floor interior zone, 10 ft. deep without dividing partitions, is supplied by high side wall registers connected to mixing boxes with conventional low velocity ducts lined with 1-in. acoustical insulation.

Interior zone of the third floor and the central core area are supplied from common horizontal branch ducts and mixing boxes located in the third floor furred ceiling space.

Air is supplied below the skylight of the central court to counteract cold down drafts during winter and solar heat gain during summer.

Return air registers with fusible link fire dampers are lo-

(Continued on next page)

"VIRGINIA"

Water Treatment Chemicals

Liquid Scale Remover

Now in a shatterproof throwaway container—tough plastic liner and spout make pouring easy. No breakage, splash or drip. Ideal for thick scale. Has dissolving capacity 50% greater than that of similar cleaners. Well inhibited to prevent serious damage to metal. No noxious fumes—safe for the operator to use.

Solid Scale Remover

A 96% sulfamic acid formulation specially inhibited to reduce attack on metal surfaces. Empty into the water, stir, and watch it go to work instantly. Non-injurious to galvanized, dipped zinc, and aluminum water-cooled equipment when used as directed. Easy to use—no heavy glass jugs—no hazards from breakage. Destroys algal growths, too.

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Eliminates slow freeze, sticking cubes, cloudy ice with bad taste and odor. Safe to use—will not injure enamel or polished metal surfaces. For automatic cube or flake ice machines. Turn off machine—fill tray with warm water—use cleaner—flush out. That's all there is to it!

Also—"Virginia" Scale & Corrosion Inhibitor, Chilled Water Treatment, Algae-Cides #1, #2 & #3. "Virginia" products are available from leading wholesalers everywhere.

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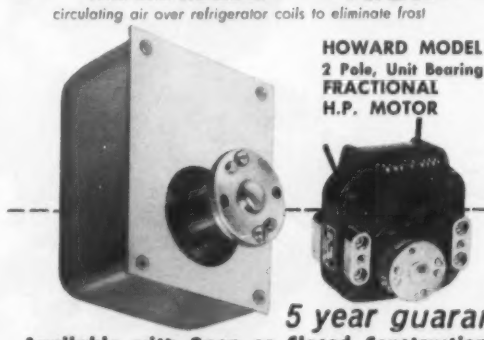

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NO LOAD RPM: 3400
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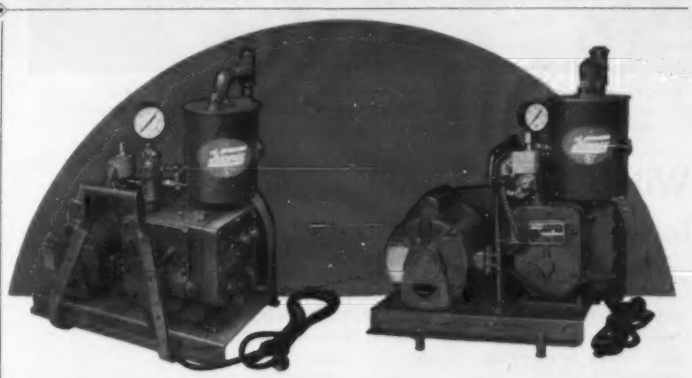

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Jewel on Stilts--

(Continued from preceding page)

cated on each floor and open into each of the three return air shafts.

Return air from exterior zones on the second and third floor are recirculated through door louvers or louvered sidelights into the interior zones which are open to the return air registers.

Return air shafts connect to a poured concrete trench that runs below the basement floor and terminates in the return air fan plenum. Entire return air fan plenum is lined with 1-in. rigid acoustic insulation.

Return air fan can return and/or exhaust air in any proportion in accordance with the control sequence. Outdoor air intake is located behind one of the service shafts. It is a horizontal grating level with the first floor and protected from weather by the second floor overhang.

Exhaust air from the return air fan is discharged into the mechanical equipment room for ventilation and is exhausted to outdoors through the exhaust grating adjacent to the second service shaft.

Outdoor air is mixed with return air in a concrete trench below the basement floor. Trench terminates at the entering side of the Cambridge filter bank.

Flexibility of exterior office space on the second and third floors required a temperature control system of equal flexibility. To get this flexibility, a needle valve is installed in the compressed air manifold control line between each two thermostat control lines.

By opening and closing the needle valves, one or more thermostats can control the temperature in one, several, or all exterior rooms with a common exposure.

Each mixing box for the dual conduit system has two control air connections. One is for the control line from the room thermostat. It positions hot and cold air dampers in accordance with thermostat setting.

The other constantly supplies air at 15 p.s.i. to a static pressure regulator mounted on the mixing box. The regulator maintains a constant volume of supply air leaving the mixing box by repositioning the hot and cold dampers proportionally.

Room thermostats are set at 74° F. d.b. the year around. Refrigeration system is designed to maintain 76° F. d.b. and 50% r.h. at 95° F. d.b. and 75° F. w.b. outdoor temperature.

The air conditioning system is switched from summer to winter control automatically by an outdoor thermostat. At outdoor temperature below 55° F. the refrigeration system is inoperative. Mixture of outdoor and return air is maintained at 55° F. so that as outdoor temperature rises to 55° F., percentage of outdoor air increases until it is 100% at that temperature.

Then the refrigeration system comes on. As outdoor temperature continues to rise, percentage of outdoor air is decreased, reaching a minimum at 65° F. (minimum is adjustable manually).

Temperature in cool air duct is maintained at 55° F. the year around. During the cooling season, a dewpoint thermostat controls a three-way valve in the chilled water piping to each cooling coil.

Temperature in the warm air duct is repositioned in accordance with outdoor temperature. It is at a maximum of 140° F. at -10° F.

Supply and return air fans operate continuously during the day and respond to thermostatic demand at night. Refrigeration system is inoperative at night.

VIEW OF DOMED SKYLIGHT and central court. Note louvers in upper balcony walls through which air is supplied to counteract cold down drafts during heating season and solar heat gain during cooling season.

A separate air conditioning system was installed for basement rooms including a meeting and conference room accommodating 100 people, a cafeteria, kitchen, canteen, and miscellaneous offices. Conditioned air is also supplied to the basement corridor.

A separate air conditioning system was recommended because of difference in occupancy from upper floors.

Meeting and conference room may be scheduled for late evening use when upper floors are unoccupied. And, high density of occupancy results in higher ratio of latent heat to total room cooling load.

In evenings operation of the basement air conditioning system results in a considerable saving in operating costs, Siegel pointed out.

Equipment for this system, also located in the equipment room, includes an outdoor and return air mixing plenum, filter bank, air recovery cells, a vertical air conditioning unit with chilled water coil, and a steam distributing reheat coil for each zone.

Reheat coil provides heating in the winter and reheat for temperature control in the summer.

General contractor on the Reynolds building was Darin & Armstrong, Inc., Detroit. Mechanical contractor was Green Plumbing & Heating, Inc., Detroit. Sheet metal contractor was Carlson Brothers, Oak Park, Mich.

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For your copy, clip this ad and mail with name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

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"Whether you're a filter distributor or a manufacturer of air handling equipment, you will like the way this filter performs," says Milton Perlman, President of Auto-Flo Corporation, Detroit, Michigan. "And ScottFoam is one big reason for its success.

"Here are three benefits which make this one of the most merchandisable filters on the market:

"RE-USABLE — It's easy to clean ScottFoam filter media. All the housewife has to do is remove the filter from her unit, wash and replace it.

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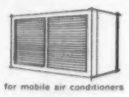
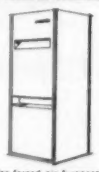
"NO AIR LEAKAGE — Because of ScottFoam's unique pore arrangement, there is no strand displacement — this means no open channels developing like conventional filters."

You, too, can build sales-appeal into your air handling products by using long-lasting ScottFoam filters. To see how, write for your copy of the booklet, SCOTTFOAM FILTER MEDIA. It's yours free for the asking; just mail the coupon.



for mobile air conditioners



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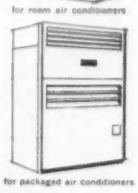

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Shake Down Test Is Just That For Bryant Gas Air Conditioners

By Frank J. Versagi

INDIANAPOLIS — A 17-20 minute shaking at 1G (force of gravity), leak testing with air followed by leak testing with refrigerant are all part of the improved production facilities for Bryant Mfg. Co.'s gas-fired absorption air conditioners.

"Since there are a great number of welded joints in an absorption system, it is of utmost importance that all the joints be thoroughly leak tested before the unit is shipped," Gordon Gray, Bryant's vice president of manufacturing told the NEWS. "The shaking test simulates the abuse the unit would get in many miles of travel in a truck or rail car."

After the unit is shaken, it is charged with air to 300 p.s.i. and the joints are flushed with a "bubble maker" solution. If the unit passes this test, it is evacuated, charged with halogenated refrigerant as a tracer gas, pressurized to over 500 p.s.i. with nitrogen and tested with an electronic halide leak detector.

"Throughout the entire manufacturing and testing operation, each unit is accompanied by a log on which all pertinent data is recorded," Gray said. And each unit is run-in for several hours to assure it is performing properly. The units are shipped charged and ready to install.

Bryant is making extensive use of powder brazing, a technique in which the brazing alloy in powdered form is shot from the torch onto the already heated joint.

The joints so formed are neat and tight, according to the company.

Liebendorfer Named To Worthington Post

EAST ORANGE, N. J.— Robert E. Liebendorfer's appointment as manager of manufacturing for Worthington Corp.'s Air Conditioning & Refrigeration Div. has been announced by A. J. Hackl, division general manager.

Liebendorfer

Liebendorfer will have charge of all the division's manufacturing operations located in plants at East Orange; Holyoke, Mass.; and Decatur, Ala.

Liebendorfer was graduated from the Carnegie Institute of Technology in 1939 with a B.S. degree in metallurgical engineering. He has been associated with the Curtiss-Wright Corp. in Woodridge, N. J. since 1942.

A. H. Witt To Open Plant Near Memphis

LOS ANGELES—As a result of an unprecedented increase in sales for Witt products in the midwest and eastern regions, A. H. Witt Co., Inc. will soon begin manufacturing operations in the immediate area of Memphis, Tenn., it was announced by A. H. Witt, president.

With the opening of the new eastern plant, facilities will provide speedier shipments to its customers east of the Rocky Mountains and will offer two to three days service to a great portion of the midwest and eastern market, it was stated.

The California plant will continue to serve its customers in the western portion of the United States and Canada.

Construction of the new Tennessee plant will begin soon with approximately 220,000 sq. ft. of area available for expansion. The factory will be equipped with new high production tooling and the latest methods and machinery for producing finned surface, it was pointed out.

Pittsburgh Chemical To Build In Kentucky

PITTSBURGH — Pittsburgh Chemical Co. will invest in excess of $4 million for construction of a new plant in Boyd County, Ky., and for expansion of the company's granular coal-derived activated carbon business.

Uses of the granules include purifying the air of many large air conditioned buildings.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Allied Chemical Tests New Foam Insulation

NEW YORK CITY—Reports of the field testing of a new experimental diisocyanate, "Nacconate 4040," for the refrigeration industry have been confirmed by Allied Chemical's National Aniline Div.

Nacconate 4040 was designed especially to provide the refrigeration industry with a low cost, one-shot, rigid polyurethane foam for low temperature insulation, according to the announcement.

Available to the refrigeration industry in developmental quantities, Nacconate 4040 is suited for manufacturing one-shot polyether rigid foam of excellent dimensional stability, it was stated. This technique is claimed to offer "substantially lower costs over currently used rigid foam systems."

Olin Mathieson Promotes Ruhe To New Post

EAST ALTON, Ill. — Promotion of Edward W. Ruhe to the newly-created position of chief engineer of the engineering and maintenance department of Olin Mathieson Chemical Corp.'s Metals Div. plant here has been announced by George A. Chandler, plant manager.

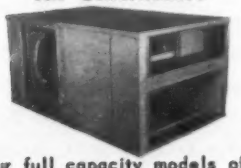
Ruhe will be responsible for all mechanical engineering and maintenance functions for brass strip, "Roll-Bond," and fabrication operations. He previously was Roll-Bond manager, responsible for manufacturing Roll-Bond products.

He will be succeeded as Roll-Bond manager by Charles O. Kunz, who has been Roll-Bond sales engineer for the St. Louis territory.

Comfort-Aire

AIR CONDITIONING

Self Contained Air Conditioners



Four full capacity models of 2, 3, 4 and 5 h.p. for residential and commercial applications. Smart in appearance and design proven, they allow complete flexibility of installation. Large coil surfaces, bonderized cabinets, Tecumseh compressor, capillary system and other quality features provide a Comfort-Aire owner many years of quiet, dependable operation.

Remote Air Conditioners

Available in the same size range as self-contained models, the split systems offer a large choice of evaporator-blower units and coil sections. The compact, efficient matched compressor units feature oversized condensers, low velocity horizontal air flow and Tecumseh compressors. Comfort-Aire matched systems are easy to install, quiet in operation and weather proofed to provide years of trouble free performance.

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Dehumidifiers - Portable Room Air Conditioners - Through-the-Wall Air Conditioners - Furnaces - Air Cooled Remote and Self Contained Air Conditioners - Air Cooled Remote and Self Contained Heat Pumps

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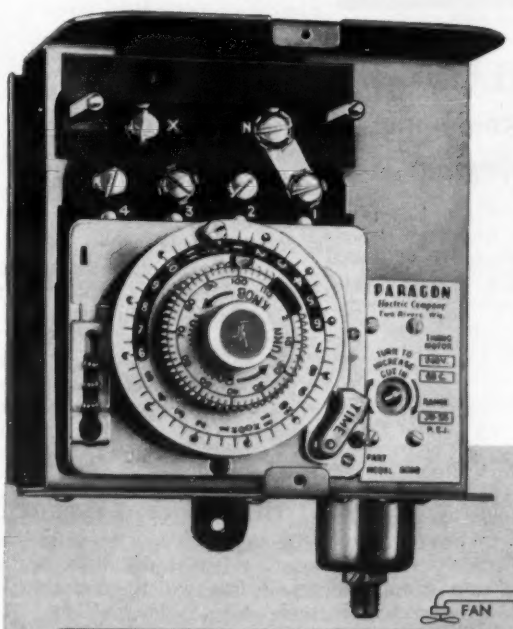
PARAGON'S 8200 SERIES

D-FROST-O-MATIC®

has more exclusive features for more precise, safer defrost control



EXCLUSIVE: Length of defrost cycle determined by pressure increase...not by time.

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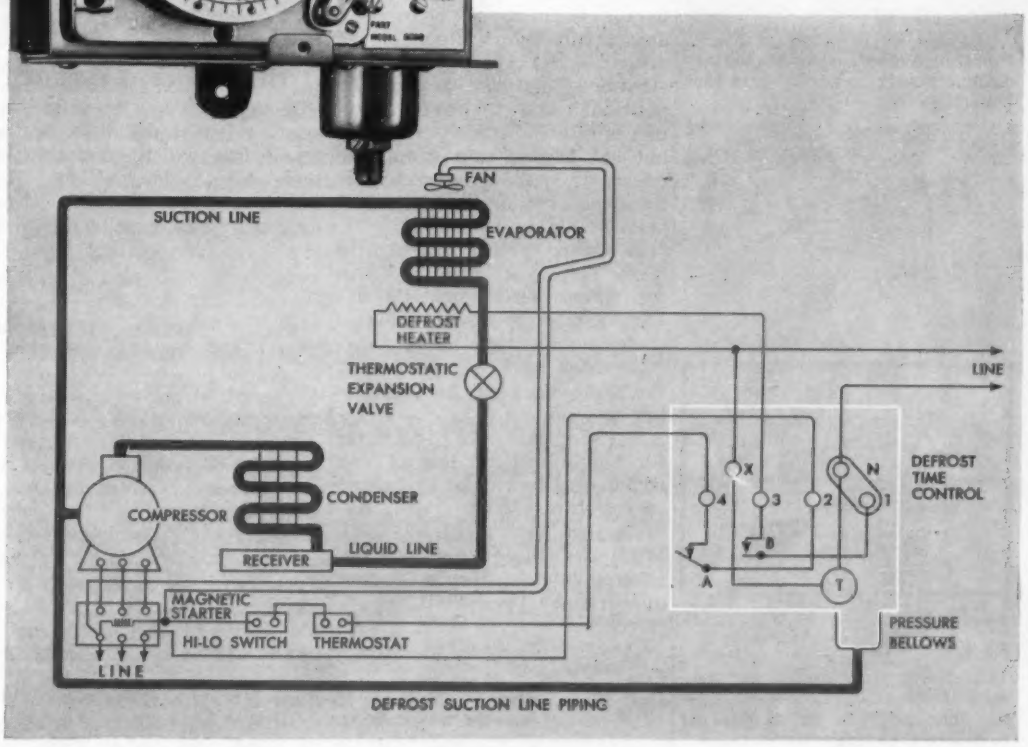
EXCLUSIVE: Adjustable pressure cut-in.

For complete details write for BULLETIN NO. 5949.



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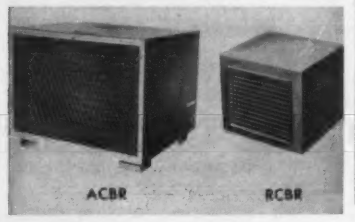
PRODUCT NEWS

Here are several new developments in the field of scientific heating and air conditioning, including a new heat pump unit that has just completed extensive field testing and development work.



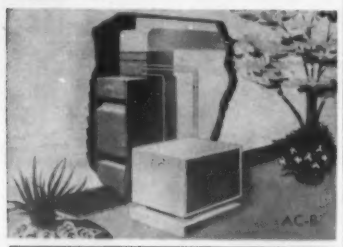
American-Standard Split-System Heat Pump

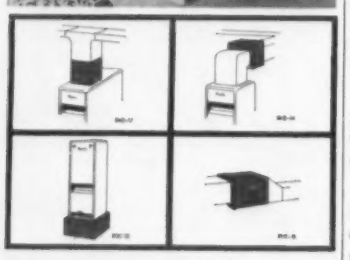
This Split-System Heat Pump, available in 3 and 5 H.P. models, consists of the AC-BR Outdoor Unit and the RC-BR Inside Unit, with its self-contained, high-capacity blower (mounted in the duct system). A single automatic thermostat provides the desired temperature in both summer and winter by means of an automatic gas reversing valve. The unit also has a de-icing system, which prevents ice build-up.

American-Standard Package Heat Pump

The ACPR Package Heat Pump is factory assembled and pre-wired, ready to install. It goes in an attic, crawl space, transom, or central hallway, to provide both heat *and* cool year-round. The ACPR comes in 2, 3 and 4 H.P. sizes. A single automatic thermostat provides the desired temperature in both summer and winter. Ice build-up is prevented by a special de-icing system, and a double drain pan saves work and money on installation, and meets FHA requirements.

For cooler areas, a supplementary electric heater is available in four capacities.



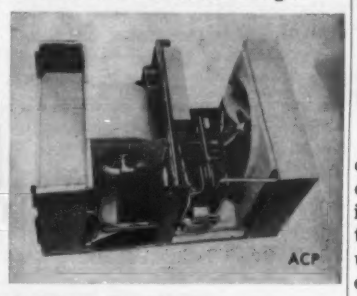


American-Standard Split-System Air Conditioner

This compact air conditioner consists of the AC-B outdoor condensing unit and one of 4 different evaporator models.

The AC-B condensing unit comes in 2, 3, 4 and 5 H.P. sizes. It is simple to connect the AC-B to a new or existing warm-air system. Controls are located where they are easy to get at; suction and liquid line valves are in front for quick service; the 4 and 5 H.P. units have *two* condenser fans for maximum cooling efficiency.

The four evaporator models cover a range of types and sizes for every kind of home and every furnace and ductwork design.



American-Standard Self-Contained Air Conditioner

This unit, the ACP, installs anywhere—through a basement wall, up in an attic, even outdoors on a roof. It features a powerful pull-through type condenser fan of high efficiency; a built-in double drain pan which eliminates the expense of fabricating a secondary pan to meet FHA requirements; a durable baked-enamel weather-resistant finish. The ACP comes in 2, 3 and 4 H.P. models. The 4 H.P. Unit has *twin* compressors.

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ELYRIA, OHIO

NLRB Orders Employer To Stop Discouraging Union Membership

WASHINGTON, D. C. — The National Labor Relations Board has ordered County-Wide Heating & Plumbing Co., Inc., Stratford, Conn., to cease discouraging membership in Local 173, United Association. The company was also ordered to:

1. Stop interrogating employes concerning their membership in the union; circulating any petition among its employes disavowing Local 173 and instructing employes to sign the petition; and depriving employes of any benefits, including but not limited to a group life insurance policy covering its employes, because of employes' membership in the union.

2. Offer reinstatement to three employes, placing those for whom employment is not immediately available upon a preferential hiring list.

3. Offer back pay to one of the three, back pay for the two having been waived.

4. Offer back pay to all three for any additional loss of pay which may be caused by failure to reinstate them.

Charges were filed by Local 173. An all-party stipulation, entered into on March 23, was approved by the NLRB.

TECH CENTER

by Frank J. Versagi, Technical Editor

Metering Devices—The Capillary Tube

Essential to proper operation of any refrigeration cycle is a controlled flow of refrigerant into the evaporator. To effect this control, several devices are used, the simplest being a hand-operated expansion valve, the most complex being the newer thermostatic expansion valve.

The proper function of a metering device is to provide a restriction, and therefore a pressure drop, between the high and low sides of a refrigeration unit. During the on-cycle, the metering device must do its part to maintain a condenser pressure high enough to liquefy the refrigerant and to maintain an evaporator pressure low enough to allow proper vaporization of the low temperature liquid refrigerant.

Without such a restriction, such a pressure drop, the essential pressure difference would not exist in the several components of the unit, and no refrigeration could be accomplished.

In addition to the manually controlled expansion valve, now used only on some large, operator-attended systems, the major metering devices are the

low side float,
high side float,
automatic expansion valve (constant pressure valve),
thermostatic expansion valve (superheat valve),
capillary tube.

We will pass discussion of the float-type controls which operate essentially in the same manner as any float valve, such as found in toilets and oil separators. Our discussion shall begin with the capillary tube, not because it was the first control, but because it is the simplest to understand.

THE CAPILLARY TUBE

A capillary may be defined as a small diameter addition to the liquid line which connects the high side to the low side. Because of the pressure drop caused by the length and small bore of the tube, it controls the flow of refrigerant into the low side.

The longer the cap tube, the greater the restriction it offers to refrigerant flow; the smaller the inside diameter, the greater the restriction.

Reciprocally, the shorter the cap tube, the less the restriction; the larger the bore, the less the restriction.

In practice, the restriction is most often varied by adjusting the length of the capillary. As will be shown later, it is essential that replacement capillaries be close to the original dimensions of the replaced one.

Even in this scientific age, the only positive way to size a capillary for a given unit is by trial and error—by using cap tubes of various lengths and ID's on a unit under all expected conditions, both in a laboratory and in the field. Because of the nature of its operation, it is mandatory that the capillary be perfectly matched to the capacity of the unit.

The tube is chosen which will allow just enough liquid refrigerant through to make up for the amount which is evaporated as the compressor operates. A slight pressure drop in the liquid takes place in the first two thirds of the capillary. Then vaporization begins and by the time the refrigerant has reached the evaporator some 10-20% of the liquid has vaporized.

On some systems, it is recommended that several feet of the capillary be soldered to the suction line, for heat exchange effect and to stabilize metering, while the remaining capillary be coiled in the compartment. Also available are patented, prefabricated capillary and restrictor assemblies sized for specific applications.

In operation, an insufficient capillary allows some uncondensed refrigerant vapor to blow through to the low side. Too much capillary will back up liquid refrigerant in the high side and short charge the low side.

Normally, the lower tubes in the condenser serve to store enough liquid refrigerant to keep a properly sized capillary functional. Since no receiver is used in a capillary system, such a system calls for an essentially

* * *

I.D.	O.D.	Approx. Wt. per 100 ft. Coil
.031	.081	1.7
.036	.087	1.9
.042	.093	2.0
.050	.099	2.2
.050	.125	3.9
.055	.125	3.8
.060	.125	3.6
.064	.125	3.5
.070	.125	3.3
.080	.140	4.0

Courtesy of Refrigeration Research.

LOW SIDE APPLICATION

Cond. Unit	High (30° F.)	Medium (10° F.)	Low (-10° F.)
	....	5′ of 0.031″, or	10′ of 0.031″, or
⅛ hp.	5′ of 0.036″, or	9′ of 0.036″, or	20′ of 0.036″.
	8′ of 0.042″, or	18′ of 0.042″.	....
	16′ of 0.049″.	....	....
	....	....	8′ of 0.031″, or
⅕ hp.	....	6′ of 0.036″, or	16′ of 0.036″.
	5′ of 0.042″, or	12′ of 0.042″.	....
	10′ of 0.049″.	....	....

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critical or **balanced charge.** Most correctly, refrigerant should be weighed into such a unit. Lacking that, the unit can be charged until frost forms on the suction line to a point just beyond the evaporator outlet.

A field test for correct charge is to check the condenser. If the last few rows are noticeably cooler than the first rows, liquid refrigerant has backed up due either to a restriction or to improper capillary selection, or to excess charge.

Too much refrigerant causes high discharge pressures and motor overload. Too little refrigerant causes a loss in evaporator and system capacity. A balanced charge is just enough to keep most of the capillary full of liquid during the running cycle.

If the unit is overcharged, frost or heavy sweating will extend beyond the recommended frost point. If the unit is undercharged, frosting will cease ahead of the proper frost point.

The major advantage of the capillary as a metering device is its simplicity and its low cost. Where relative constancy can be expected in load and in subsequent suction and discharge pressures, the capillary is ideal.

UNLOADING CHARACTERISTIC IS AN ADVANTAGE

Another advantage of the capillary is its unloading characteristic. On the off-cycle, pressures in the system equalize, since the refrigerant in the high side flows through the capillary to the colder and lower pressure low side. This unloading characteristic reduces the amount of refrigerant charge required and makes possible the elimination of a receiver. In addition, it permits the use of a split-phase hermetic motor-compressor, since at equalized pressures, the starting torque requirement is much less.

Conversely, capacitor type units, with a receiver, are not recommended for use with a cap tube. In reworking such a unit to make it a capillary system, the receiver and any liquid trap in the high side must be removed, so there can be rapid unloading during the off-cycle. So as not to impose heavy loads on the condensing unit during pulldown, the evaporator must be designed to operate on a small amount of refrigerant.

Because of the unloading characteristic of the capillary, because there will always be liquid in the low side when the unit starts up, an accumulator is almost always placed in the suction line to prevent any slugs of liquid from reaching the compressor. It is possible to eliminate the need for an accumulator by making the evaporator large enough to hold the entire liquid charge.

One other result of the unloading characteristic of a capillary system is that it is impossible to use a pressure control to start the unit. A temperature control must always be used.

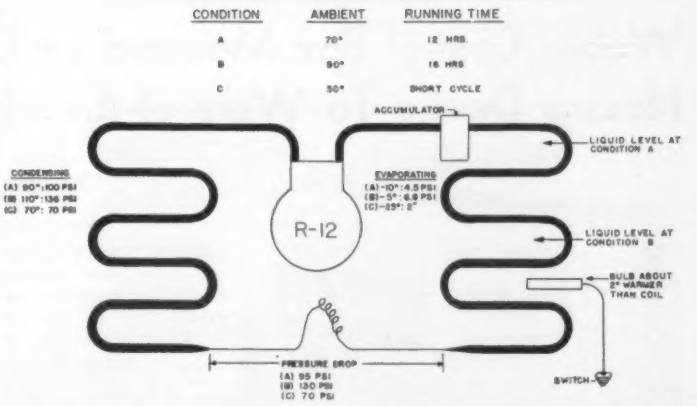
A capillary system does not function efficiently throughout a wide range of ambients. This has been one problem with the use of capillaries in heat pumps which are expected to operate at all ambients from tropic to arctic. An understanding of what occurs as ambients change may be gathered from following the result of such changes on a typical refrigerator designed to produce its rated capacity at a 70° ambient, say, with a 95.5 p.s.i. pressure drop through the capillary.

RUNNING TIME VARIES WITH AMBIENT

At a 70° ambient, the unit will operate about 12 hours out of 24. The condensing pressure will be about 90°, the condensing pressure about 100 p.s.i. (R-12). Holding a zero box, the evaporator will operate at about -10°, about 4.5 p.s.i., and the liquid level in the evaporator will reach, say, the last turn.

If the ambient rises to 90°, more liquid flows through the capillary, liquid level in the coil may rise as far as the accumulator. Condensing temperature will be 110°, pressure 136 p.s.i. Evaporator temperature will rise to about -5°, suction pressure to about 6.8 p.s.i. The resulting box temperature will be closer to 5° than to zero. Under these conditions, the refrigerator will operate 16 hours to maintain design temperature. Pressure drop through the capillary becomes 130 p.s.i.

If the ambient drops to 50°, less liquid will pass through the capillary, starving the coil and causing short cycling because the evaporator gets cold, then hot in rapid alternation and the temperature control turns the unit on and off accordingly. At this ambient, the condensing temperature drops to 70°, the condensing pressure to 70 p.s.i.; the evaporator goes into vacuum at 2 in. with a temperature of about -25°. Pressure drop across the cap tube is 70 p.s.i.



Obviously, the capillary is not a self-adjusting metering device. For this reason, and because very small amounts of dirt, moisture, wax, lint, can interrupt refrigerant flow through the tiny tube, it is not recommended that cap tubes be installed except under closely controlled conditions—in the shop, rather than in the field, if possible. Replacement capillaries should be within a few inches of the original length; certainly no more than 10-12-in. difference is advisable.

file guide—CAPILLARY: metering devices

Next: AUTOMATIC EXPANSION VALVE

York Room Unit Promotion Marks 75th Anniversary

YORK, Pa. — A nationwide "Diamond Anniversary Promotion" on York room air conditioners is under way in all major markets according to Todd Owens, manager of advertising and sales promotion for the York Div. of Borg-Warner Corp.

The promotion calls attention to York's 75th anniversary year and introduces the company's 1960 line of room air conditioners to the public. Newspaper ads in every key market area invite customers to participate in the celebration.

After signing registration forms, customers may draw from a bowl of simulated and real diamond rings. Each bowl contains one ring with a minimum value of $500 and a number of artificial duplicates.

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Kerotest employs more than a half dozen routine quality control tests on raw materials and in manufacture and final valve assembly. It's one of the important reasons why Kerotest valves last longer, perform more efficiently and economically.

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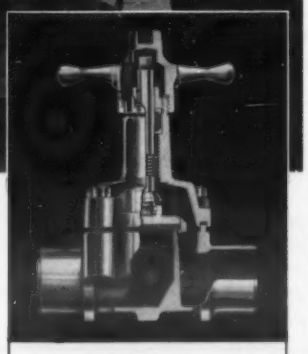

KEROTEST R12 PACKED GLOBE VALVE

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Specify and use the R12 packed globe valve for operating pressures up to 500 psi and temperatures up to 200° F.

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- Leak-lok bonnet design
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- Positive shut-off
- Quick seating disc for easy operation

R12 series ⅜" through 2½" forged brass
R10 series 2½" through 4½" cast brass

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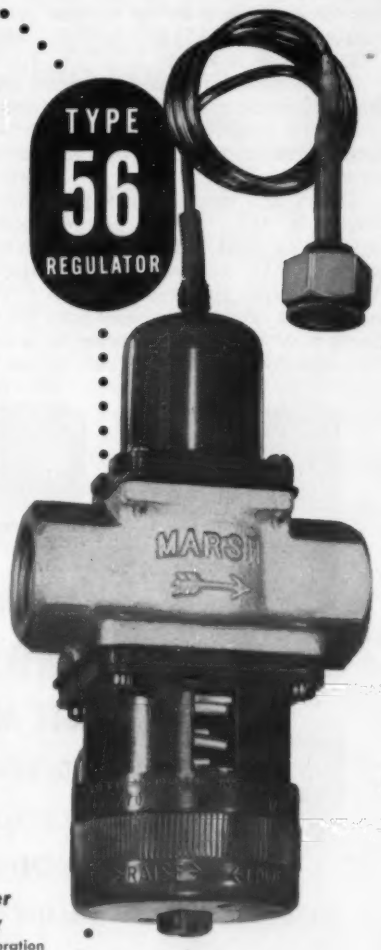
TYPE 56 REGULATOR



That's the verdict of men who know water valves.

They like its wide range: One valve adjustable for both R-12 and R-22 without changing springs. Simply turn the knurled cap to any setting from 60 to 270 lbs. Cap can be easily removed and the setting made tamper proof when desirable.

They like the way it fits in: Small and compact, but with ample capacity, smooth modulation, excellent flow characteristics.

They like its quality construction: Monel seat beads that minimize wire drawing; direct acting leak proof bellows. They like the provision for manual flushing after installation to remove dirt and grit. Bulletin tells the story.

Nut provides for tamper proof setting when this is desirable.

Buy it from your wholesaler

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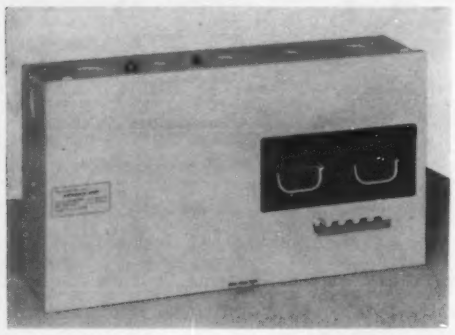
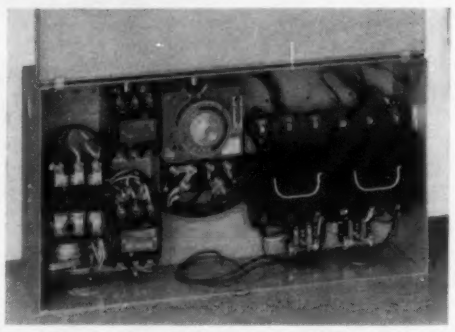
Weber Control Box Mounted on Compressor Rack Houses Device To Warn of Electrical Failure



EXTERIOR VIEW of control box shows fused pull out switches for compressor and defrost. Pilot light and reset button are on top of box.



INTERIOR VIEW of Power Guard that also features 3-leg automatic delayed reset to give maximum protection.

LOS ANGELES—A new type of electrical failure warning system incorporated into a control box for refrigeration compressors handling commercial refrigerator equipment in which perishable food is stored, has been introduced by Weber Showcase & Fixture Co. here.

Called the "Power Guard" the electrical failure warning system serves to warn those on the premises by always being lit except when one of the following conditions exists or has existed:

1. A fuse is blown.
2. An electrical power failure has occurred.
3. The compressor motor has overloaded and kicked out the overload device.

Two extra contacts are provided in the "Power Guard" system so that other warning devices may be easily added. When several compressor racks are to be guarded, these contacts may be wired in series to the store burglar alarm, or to an alarm in the store office, or they may be connected by the telephone company to an alarm in a home or a central service department away from the store.

A prime feature of Weber's new control box is that it incorporates a specially designed fused pull-out switch, which means the compressor can't be started while being worked on when the fused pull-out switch is removed, and this feature permits fuses to be checked or changed without danger to personnel or equipment.

Another prime feature available with the Power Guard is a 3-leg automatic delayed reset. If the pilot light goes out, it will remain out until it is manually reset, even if the electrical power has been restored and the compressor motor is operating normally.

The pilot light is reset by pressing the reset button beside the pilot light on top of the compressor rack control box. If the abnormal condition has been corrected, the pilot light will light and remain lit when the reset button is released. If an abnormal condition still exists, the light may not light at all, or it will not stay lit when the reset button is released.

It is advised that several attempts to reset the pilot light should be made at one or two-minute intervals, thus giving the automatic overload reset device time to reset in the event the compressor motor is overloaded, or was overloaded within the preceding few minutes. Repeated attempts to reset the pilot light will not harm the warning system, it is stated.

The extra contacts in the Power Guard system may also be connected through individual refrigerated fixture thermostats to give warning either through the pilot light, or the remote alarm system, when temperatures near the danger point.

Oppose AFDOUS Code

Nine Frozen Food Handler Groups Rally To Draw Up Own Standards

WASHINGTON, D. C.—Nine national trade organizations have joined together in a uniform program to coordinate frozen food handling from processor to retailer, it was announced by the organizations involved.

The program was unanimously adopted, it was stated, after indications pointed to the possibility of a number of separate and distinctly different regulations being promulgated by various states.

"The frozen food industries vigorously oppose the adoption as statutes of regulations of the AFDOUS code with its unrealistic provisions," the announcement stated. The organizations said they will oppose adoption of such a code as a regulatory measure for application at any industry level.

In announcing their program, the organizations stated that the frozen food industry has long recognized the desirability of achieving a 0° F. goal, but that the achievement of this goal in a reasonable and practicable manner includes recognition of the responsibility of industry to continue to provide the public with adequate supplies of quality frozen foods without interruption.

In order to assist all segments of the frozen food industry in their programs, standards of industry practice are being developed by each section of the industry.

This unified program with its statement of policy was subscribed to by the American Trucking Associations, Burlington Refrigerator Express-Fruit Growers Express-Western Fruit Express, Institute of American Poultry Industries, National Association of Frozen Food Packers, National Association of Food Chains, National Association of Refrigerated Warehouses, National Association of Retail Grocers of U. S., National Fisheries Institute, and National Frozen Food Assn.

Recold Catalogs Cover Product Coolers

LOS ANGELES — Recold Corp., 7250 E. Slauson Ave., Los Angeles 22, has announced the publication of a new catalog for its series of vertical and horizontal product coolers with centrifugal blowers.

The catalog, designated as #8COa, contains information on Recold's redesigned horizontal units, now known as "AH" units. The AH units feature modular construction and allow for a great flexibility in location of blower discharges, motor and coil locations, it was stated.

Recold's complete line of product coolers are available for either high temperature (above 34°) or below freezing applications, with either water or gas defrost available. These coolers have heavy-duty angle iron frame, heavy-gauge galvanized panels.

B & G Promotes Smith

MORTON GROVE, Ill.—Appointment of Lawrence J. Smith as vice president in charge of research at Bell & Gossett Co. was announced by R. E. Moore, president.

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2. CALGON SCALE REMOVER—To do an efficient job safely, use Calgon Scale Remover. This powdered acid has corrosion inhibitors, wetting agent, anti-foam and pH color indicator.

3. CALGON ALGAECIDE and CALGON BIOCIDE RP—These Algaecides kill slime and algae fast.

4. BANOX®—Protects condensers, pumps and water lines against corrosion. Use it at shut down—Spring start-up—after acid cleaning.

5. CALGON CONDENSER CLEANER—Specially formulated for low-cost, safe cleaning of cooling water systems.

Calgon products for *every* water problem include: Calgon Ice Machine Treatment, Ice Machine Cleaner and Gas Leak Detector. See your Refrigeration Wholesaler.

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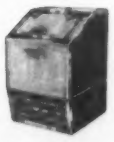
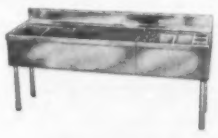


KUBE KING

WALK-IN



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FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

NLRB Decision--

(Continued from Page 1, Col. 5)

story, page 2, Oct. 5, 1959 issue of NEWS.)

He accepted the steel union's claim that the union was simply protesting work done by others that laid-off steel workers were entitled to do according to their work classifications under their contract.

He rejected the charge by craft union plumbers and electricians and their employers that the steel union was engaged in an unfair labor practice.

He said that the dispute was primarily between the steel workers and their employer and the harm done to outside contractors was incidental to the dispute and did not represent a secondary boycott.

The steel union has indicated that it will appeal the board's decision.

Atlanta Code--

(Continued from Page 1, Col. 5)

the city will permit "any qualified person" to install water heaters but only after getting a permit at a cost of $1.25.

As a safety measure, the city will inspect installations to see that they meet all safety regulations.

The new code will be presented to the aldermanic sewer and sanitary committee on June 27. After approval from that body it will then be placed before the full aldermanic board in July for adoption.

The proposal on appliances created a stir in Atlanta with dealers attending a special hearing on the proposals. Bob Shelley, of Shelley Appliances, representing the Franchise Dealers Association of Atlanta, protested the proposal on the grounds that it would put more work on dealers already overburdened with paper work.

He said the utility companies already police equipment to see that it is safe and they have the authority to discontinue service on installations that are not safe.

NAPC Convention Program--

(Continued from Page 1, Col. 4)

cussions are: "Communications: Maze or Thruway?"; "Apprenticeship—Key to Tomorrow's Trained Mechanic"; "Electric Heat—Smoldering Spark Today, Dynamo Tomorrow?"; "Theory vs. Practice in Heating Job Design"; "Changing Theories and Practices in Plumbing Design for the Sixties"; "Improved Specifications and Contract Administration."

Arthur S. Fleming, Secretary of the Dept. of Health, Education and Welfare, will be the keynote speaker. He will address the opening session. Another address — Tuesday morning — will be given by Peter T. Schoemann, general president, United Association.

Some 60 resolutions have been submitted for debate by delegates to the convention. Twenty concern a proposal to change the name of the NAPC to reflect its members' activity in heating and air conditioning.

Social events include a get-together buffet and beer party in the Auditorium Sunday evening, June 19; NAPC cocktail party Monday evening at the Statler-Hilton hotel; Fred Waring "Stereo Fiesta," a 2½-hour variety show Tuesday evening at the Auditorium; state and regional dinners Wednesday evening; and the President's Ball at the Sheraton-Cleveland Thursday night.

Two nationally-known women will address the NAPC Women's Auxiliary during its 40th convention. They are Mrs. Margaret Priebe, better known as "Mrs. America," who will also participate in NAPC convention and exposition activities, and Mrs. Edith Brazwell Evans, editor-in-chief of *Living for Young Homemakers* magazine.

Among Exposition exhibitors are the following:

American-Standard; Barnes Mfg. Co.; Bell & Gossett Co.; A. W. Cash Valve Mfg. Co.; Combustion Engineering, Inc.; Crane Co.; Decatur Pump Co.; The Dole Valve Co.; The Ebco Mfg. Co.; Edwards Engineering Corp.; General Electric Co.; Hotpoint; Ideal Pump Co.; The Imperial Brass Mfg. Co.; Insto-Gas Corp.

Johns-Manville Corp.; Kenco Pump Div.; Lake Chemical Co.; Nibco, Inc.; Rheem Mfg. Co.; Robertshaw-Fulton Controls Co.; Ruud Mfg. Co.; Slant Fin Radiator Corp.; A. O. Smith Corp.; The Halsey W. Taylor Co.; Watts Regulator Co.; Westinghouse Electric Corp.

The convention program, edited somewhat, follows:

Program

MONDAY, JUNE 20

10 a.m.—Opening session

Call to order; national anthem; invocation; memoriam; welcome; introduction of NAPC president; announcement of convention committees; introductions; preliminary report of Credentials Committee.

Greetings from MCAA—Joseph F. Kearney, president, Mechanical Contractors of America.

Greetings from RACCA—T. C. Alexander, president, Refrigeration & Air Conditioning Contractors Association.

Address—Dr. Arthur S. Flemming, Secretary of Health, Education & Welfare Dept., Washington, D. C.

1:30 p.m.—Second session

Introductions.

Presentation of resolutions.

Report of the Labor Department—Richard Clemens, general chairman.

Apprenticeship—Robert T. Morrill, chairman, Industrial Relations Council—Carl R. Lindblad, chairman.

Report of the Legislative Committee—Frank H. Inscho, Jr., chairman.

Report of the Historian—Robert E. Murphy.

"A Look at the Sixties"—Panel session presentation by industry trade magazines.

Cocktail Party—Ballroom, Statler-Hilton hotel, 6:30-7:30 p.m.

TUESDAY, JUNE 21

10 a.m.—Third session

Report of the Plumbing-Heating-Cooling Information Bureau Committee—Walter O. Ford, chairman.

Report of the Membership Committee—Richard G. Corcoran, chairman.

Presentation of the Harry L. Stevens District 7 Membership Award.

Report of the Policy Committee—Wilbur S. Hokum, chairman.

Address—Peter T. Schoemann, general president, United Association.

Report of the Scholarship Committee—Clifford F. Smith, Jr., chairman.

Nominations of officers and directors.

1:30 p.m.

Business seminars—panel discussion groups.

A. "Communications: Maze or Thruway?" — Main Meeting Room, Lower Lakeside Hall.

B. "Apprenticeship—Key to Tomorrow's Trained Mechanic" — Area 1, Main Arena.

C. "Electric Heat—Smoldering Spark Today, Dynamo Tomorrow?"—Area 2, Main Arena.

D. "Theory vs. Practice in Heating Job Design"—Area 1, Main Arena.

E. "Changing Theories and Practices in Plumbing Design for the Sixties" — Meeting Area #2, Main Arena.

F. "Improved Specifications and Contract Administration" — Meeting Area #3, Main Arena.

8:30 p.m.

The Fred Waring show—Music Hall, Public Auditorium.

WEDNESDAY, JUNE 22

10 a.m.—Fourth session

Report of the Technical Department—C. D. Brownell, Jr., general chairman. Plumbing Standards Committee—Harry L. Stevens, chairman. Research-Standardization Committee — Dudley Haverty, chairman. Sanitation Committee—Edwin C. Dean, chairman. Heating-Cooling Div.—Louis Bloom, chairman.

Report of the president—Irvin L. Rechkemmer.

Report of the vice president—Carl N. Finley.

Report on Electric Heat Study Subcommittee — Arthur McManus, chairman.

Report of the Public Relations Committee—Leonard F. Kiley, chairman.

Speaker—To be announced.

1:30 p.m.—Fifth session

Report of the secretary—J. H. Soehnlen.

Report of the executive secretary—J. O. Hendrickson.

Report of the treasurer and Finance Committee—John M. Rhoades.

Report of the Inter-Industry Liaison Committee—G. Allen Briggs, chairman.

Introduction of candidates for office.

Report of the Resolutions Committee—Fred A. Schmitz, chairman.

THURSDAY, JUNE 23

9:30 a.m.—Sixth session

(Sheraton-Cleveland Hotel)

Report of the Auditing Committee—Albert A. Kussmann, chairman.

Final report of the Credentials Committee—George Roesinger, chairman.

Report of the Resolutions Committee (continued).

Unfinished business; new business.

Election of officers and directors.

8:30 p.m.

President's Ball—Wedgewood Ballroom, Sheraton-Cleveland hotel.

Howard Refrigerator Names H. B. Glover

PHILADELPHIA—The board of directors of Howard Refrigerator Co., Inc., as part of its plan for a greater volume of the commercial refrigeration business, has appointed Horace B. Glover vice president for sales.

Glover has moved up through various positions with Howard over the past six years.

"He will increase the sales representatives in the field, and direct the new sales approach as exemplified in the successful "Baker's Dozen" shipment of our 'Zephyr' beverage coolers—the dealer pays for 12 and receives 13," the company said.

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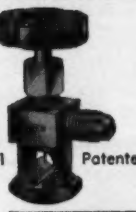
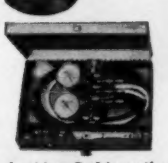


HP-41 Patented

1 Valve for 4 Tube Sizes—3/16", 1/4", 5/16", and 3/8".

HP-41A Patented

New Tamper-proof style has Allen wrench head.



CHARGING AND TESTING UNIT IN METAL BOX includes gauges, manifold bar, hand wheels, hanging hook, hose holder, and one set of Madden color coded charging lines.

Write for New Refrigeration and Air Conditioning Catalog No. R460.

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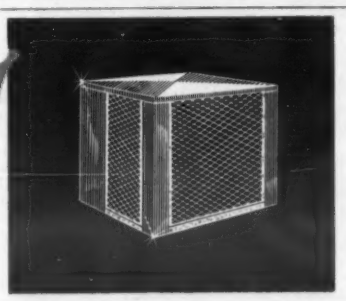
QUIET QUALITY



Quietness of the outside condensing unit is an absolute *must* for a successful air conditioning system. Simple as it sounds this is hard to achieve and still keep efficiency high and the size small enough to be unobtrusive. *But* BAR-BROOK Air-Cooled Condensers *have done it!* They are whisper-quiet — thanks to an extra large fan with aerodynamically corrected blades. After years of research and testing we have developed this condenser design that retains peak efficiency no matter what the weather. Superb craftsmanship and the finest materials add up to make BAR-BROOK the *Quality Line!* You can find cooling-heating equipment that sells for less and some that sells for more — *but none that is better* than BAR-BROOK! That's why you should write or call for catalog and complete details — *NOW!*

BAR-BROOK Condensing Units are available in 4 types, 3- and 5-ton models. BAR-BROOK companion equipment includes cabinet models with cooling coil, heater, blower and filter . . . and various combinations of these components.

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- **AVOID BURN-OUTS BY CORRECTING EXCESSIVE VOLTAGE**

High line voltage makes motors heat faster, deteriorates insulation, causes motors to burn out; shortens life of electronic tubes *(including tv picture tubes)* and incandescent lamps; increases operating cost per hour. An Acme Electric transformer connected to buck a high line-voltage can correct these problems.

- **GET MAXIMUM PERFORMANCE BY CORRECTING UNDERVOLTAGE**

Motors fail to reach their maximum torque when line-voltage is much below normal, and often continue to operate on starting windings until they heat up and burn out; electronic tubes fail to function properly; fluorescent and incandescent lamps are reduced in light output. An Acme Electric voltage boosting transformer can correct these conditions and save money.

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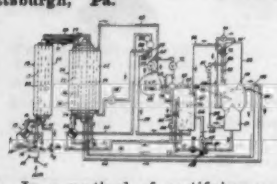
PATENTS

Week of Jan. 5 (Concluded)

2,919,553. COMBINATION FLUID HEATER AND DEHUMIDIFIER. Robert W. Fritts, Elm Grove, Wis., assignor, by mesne assignments, to Minnesota Mining & Mfg. Co., St. Paul, Minn.

5. An annular heat pump, comprising a plurality of first and second thermoelements of dissimilar thermoelectric material in annular arrangement, and first and second thermojunction members having flat portions interposed radially between said first and second thermoelements with the opposite surfaces of said flat portions electrically joined to said thermoelements to afford thermojunctions at said joints, said first thermojunction members having heat transfer portions exposed on the inner side of said heat pump, and said second thermojunction members having heat transfer portions exposed on the outer side of said heat pump.

2,919,555. APPARATUS FOR AND METHOD OF SEPARATING GASES. Robert W. Hughes, Michigan City, Ind., and Samuel C. Collins, Watertown, Mass., assignors to Joy Mfg. Co., Pittsburgh, Pa.



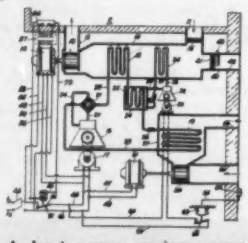
1. In a method of rectifying a gaseous mixture wherein during normal operation an entering mixture of said gases is passed through a heat exchange zone in counterflowing heat exchange with at least one product of rectification at a lower temperature, to lower the temperature of said mixture and purify the same by removing substantially all of at least one component of higher boiling point, and at least the major portion of the purified mixture is directed through an expansion device, through a first passage in a second heat exchange zone in heat exchange relation with said at least one product of rectification prior to the latter's passage in heat exchange relation with said entering mixture of said gases. . . .

2,919,557. ICE MAKING MACHINES. Gerald M. Lees, Chicago, Ill.

1. A method of making ice which comprises delivering a predetermined amount of water between two spaced freezing surfaces and within retaining means between said surfaces, retaining said water between said surfaces until said water is frozen to form an ice sheet, withdrawing the retaining means from water-retaining association with said surfaces and moving a

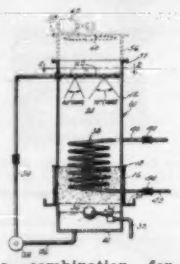
surface inclined with respect to an edge of said ice sheet against said edge of said ice sheet to dislodge said ice sheet progressively from said surfaces in fragments.

2,919,558. AIR CONDITIONING SYSTEM. Rodney P. Lauer, Spring Garden Township, York County, Pa., assignor to Borg-Warner Corp., Chicago, Ill.



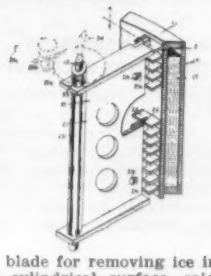
7. A heat pump system comprising a first refrigerating apparatus including an outdoor heat-exchanger for absorbing heat from outside air and an indoor heat-exchanger in heat-exchange relation with a fluid to be heated and supplied to an enclosure; a second refrigerating apparatus including, an evaporator utilizing hot refrigerant in said first apparatus as a heat source and a condenser in heat-exchange relation with the fluid. . . .

2,919,559. COOLING SYSTEM. Fred C. Koch, Wichita, Kan., assignor to Koch Engineering Co., Inc., Wichita, Kan.



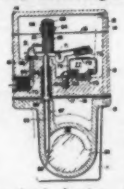
1. In a combination for cooling liquids, a hollow enclosure having an upper end section in communication with the surrounding atmosphere, a liquid de-entraining, air-permeable section defining a lower peripheral wall portion of said enclosure and comprising a uniform continuation of said upper end section, spray means disposed in said upper end section for spraying liquids in the direction of said air-permeable section, said liquids being broken into fine particles in the normal spraying operation, said spray means action inducing air to enter said enclosure upper end section. . . .

2,919,561. ICE HARVESTING MEANS FOR FLAKED ICE MACHINES. Gerald M. Lees, Chicago, Ill.



1. A blade for removing ice in flakes from a cylindrical surface, said blade having a leading cutting edge, a cylinder engaging edge, and a mounting edge, said cylinder engaging edge being an arc extending substantially the length of said blade and on a radius substantially that of said cylindrical surface and meeting said leading edge at nearly a right angle. . . .

2,919,708. COMBINATION VALVE. James K. Horne, Minneapolis Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis.

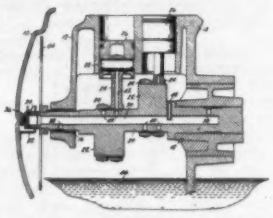


1. In a control device, the combination comprising a valve body having an inlet and a first outlet and a valve seat therebetween and a second outlet and a bleed port, a manually operable valve therein movable between "off," "on" and "start" positions and having an inlet connected to the inlet of said valve body and an outlet chamber connected to the inlet side of said valve seat. . . .

2,919,807. FILTER. Southwick W. Briggs, Howard County, Md.

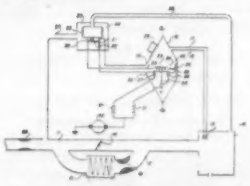
1. A filter comprising a permeable impregnated paper filter element having axial pleats defining a plurality of inner and outer peaks, said outer peaks being spaced apart and lying substantially in a cylinder, a substantially uniformly permeable core disposed within said element for engagement with said inner peaks, an annular cover member permeable substantially throughout its length embracing said outer peaks throughout their length, and axially separated annular bands of adhesive bonding said cover member to said outer peaks.

2,919,847. OIL SYSTEMS FOR REFRIGERANT COMPRESSORS. Raymond A. Karhan, Dover, Pa., assignor, by mesne assignments, to Borg-Warner Corp., Chicago, Ill.



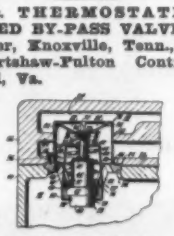
A refrigerant compressor comprising a housing containing a body of lubricant therein, said housing including means forming a working space for a compression means; a horizontal shaft having an axial lubricant-receiving bore of uniform diameter formed therein, said shaft further including a plurality of radial ports and a passageway radial throughout its extent and formed through a wall thereof; a plurality of bearings mounted in said housing receiving said shaft for rotation, said bearings each confining a respective radial port. . . .

2,919,859. TEMPERATURE CONTROL SYSTEM. Rudolph E. Krueger, Burbank, Calif.



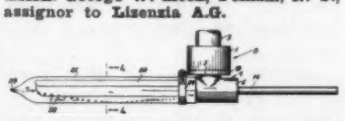
1. In a temperature control system in which air conditioning of a confined space is accomplished by means of a varying flow of fluid into the confined space, temperature sensing means for sensing the temperature within the confined space, a valve for controlling the flow of fluid, pressure responsive means subjected to changes in pressure drop of the fluid, across the valve. . . .

2,919,860. THERMOSTATICALLY OPERATED BY-PASS VALVE. Joseph P. Wagner, Knoxville, Tenn., assignor to Robertshaw-Fulton Controls Co., Richmond, Va.



1. In a thermostatically operated by-pass valve for controlling a flow of fluid to a pair of conduits, the combination comprising a perforated member through which the flow of fluid passes and having a central opening and a valve seat surrounding said opening, a sleeve valve element having an open end cooperating with said valve seat for controlling the flow of fluid to one of the conduits and having a ported end adapted to cooperate with the other of the conduits for controlling the flow of fluid thereto, thermally responsive means including a sleeve element and a piston-stem member. . . .

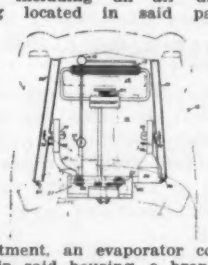
2,919,861. SPRAYING DEVICE FOR A COOLING TOWER AND THE LIKE. George W. Meek, Pelham, N. Y., assignor to Lizenzia A.G.



1. A spraying device of the character described having a rotatable arm, a tubular water-supply coupling for receiving pressurized water therethrough, said coupling being attached at one end of said arm whereby water emerging from the coupling is directed toward said arm, and a soft flexible, collapsible bag-like sleeve of water-impervious material attached to the coupling and enclosing the arm for the length of the arm and having a row of spray holes gradually increasing diameter extending along a major portion of said arm. . . .

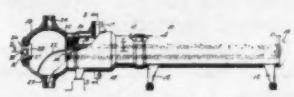
2,919,907. COMBINATION HEATER AND AIR CONDITIONER UNIT. Homer C. Simons, South Euclid, Ohio, assignor to Eaton Mfg. Co., Cleveland, Ohio.

1. In combination, a vehicle having a passenger compartment, heating and cooling apparatus including a pair of ventilating ducts having a discharge opening in said passenger compartment, a heater adapted to heat air passed therethrough, a refrigeration system including an air discharge housing located in said passenger



compartment, an evaporator core disposed in said housing, a branch duct providing communication between said heater and an intermediate point of one of said ventilating ducts, a second branch duct providing communication between said housing and an intermediate point of the other of said ventilating ducts. . . .

2,919,906. HEAT EXCHANGER. Howard N. Haight, Alhambra, Calif., assignor to C. P. Braun & Co., Alhambra, Calif.



In a heat exchanger of the shell-and-tube type, the combination of: a generally cylindrical shell, a generally spherical hollow channel member positioned coaxially of the shell and having a lateral circular opening substantially smaller than the inner diameter of the member, a flat circular tubesheet welded to the shell, weld means in the opening joining the tubesheet to the hollow channel member, the tubesheet having a plurality of apertures extending therethrough. . . .

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POSITIONS WANTED

SERVICE AND installation manager, age 46, married, now employed. Qualified to take complete charge of all phases of service, installation, warehouse, stockroom, service contracts and service training program. Resume sent upon request. BOX A6554, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

GRADUATE ENGINEERS, with professional experience in mechanical and electrical engineering, to work on the development of heating & air conditioning equipment for missile support vehicles at the U.S. Army Engineer Research & Development Laboratories, Fort Belvoir, Virginia (located 15 miles south of Washington, D. C.). Applicants must be U.S. citizens and meet full U.S. Civil Service qualification requirements. Starting salary for qualified applicants $8810 p.a. Work requires a knowledge and application of mechanical & electrical engineering principles in the tests, modification design, construction, operation and maintenance of heating, air conditioning, refrigeration, dehumidification, ventilation, & associated equipment. Qualified engineers interested in employment in these laboratories should address Application Form, SF-57, and requests for information to the CIVILIAN PERSONNEL OFFICER, Fort Belvoir, Va., making specific reference to this advertisement. Standard Forms 57 may be obtained from your Post Office.

ATTENTION FIELD service men: Fedders Corporation has an opening for district service manager in Midwest region. Must have experience in central heating and cooling service, installation and application. Willing to relocate, if necessary. Submit your resume to: Sil Thompson, c/o FEDDERS CORPORATION, 58-30 Grand Avenue, Maspeth 78, New York.

SERVICE SUPERVISOR to headquarter in Pittsburgh, Pa. with nationally recognized manufacturer of air conditioning equipment 2 - 125 tons and residential heating. To train distributor/dealer personnel, process warranty claims and trouble shoot where necessary. College education. 3-5 years experience. Limited travel. Excellent opportunity. Submit resume to BOX A6556, Air Conditioning, Heating & Refrigeration News.

PROCESS ENGINEER—Heavy experience in process engineering preferably in small to medium home air conditioning units. Applicant must be familiar with modern methods of manufacture and tooling. Location, western New York state. Salary commensurate with experience. BOX A6562, Air Conditioning, Heating & Refrigeration News.

PRODUCT DEVELOPMENT engineer (Air Conditioning) — National concern desires engineer that can head up air conditioning and heat pump program. Must be capable of making original design layouts on packaged and split system residential air conditioners. Should be well acquainted with UL test procedures. Excellent benefits including tuition refund plan for advanced study in local university and schools. Location, western New York state. Salary commensurate with experience. BOX A6561, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

USED AND repairable or new compressors and condensing units above 5 h.p. Also need surplus parts for G. E., Brunner, Copeland, Mills, Worthington, Par, etc. Give full descriptions and part numbers. Don't junk it; we'll buy it. UNITED REFRIGERATION CORPORATION, 514 W. 12th St., Los Angeles 15, California.

EQUIPMENT FOR SALE

NOTICE: DISTRIBUTORS, dealers, servicemen, users refrigeration equipment—repair parts available all models Baker ammonia and Freon compressors. Also models 6B and F6B ammonia compressors. We are exclusive Baker export sales office. Manufacturers' export agents refrigeration, air conditioning, and allied equipment. THE KEISER COMPANY, 7651 South Ashland Avenue, Chicago, Illinois.

USED YORK-Comp. 5 to 75 h.p. good condition. Four air cond. 5 ton air cooled condensing units. New 3 phase - outdoor use JE 500 comp. Cheap - New 2 & 3 ton chillers - air & water cooled. TAF-AIR CO., 836 Holly St., Phila. 4, Pa.

BUSINESS OPPORTUNITIES

FLORIDA OPPORTUNITY for experienced service firm operator to invest $15,000 to $25,000 for equal partnership in old established company whose expanding business requires more manpower at management level. Not a distress sale. All replies strictly confidential. Write BOX A6555, Air Conditioning, Heating & Refrigeration News.

COMMERCIAL REFRIGERATION and air conditioning service business, well established in Southern California's San Fernando Valley for sale by owner, including trucks, inventory and equipment. This is a growing and profitable business for a man who knows the service business. Price $12,000.00. Write BOX A6557, Air Conditioning, Heating & Refrigeration News.

These Plants Are Staying Open

The following plants have informed the NEWS that they follow staggered vacation schedules or have no plans for closing at any time during the summer. Companies marked with * will close for vacation or inventory in the fall or winter. Dates will be given later.

Ace Pump Corp., Memphis.
Aeroquip Corp., Jackson, Mich.
Aimco Products Corp., Tulsa, Okla.
Ajax Equipment Co., Montclair, N. J.
Alco Valve Co., St. Louis.
Allin Mfg. Co., Chicago.
American Air Filter Co., Kennard Div., St. Louis.
American Potash & Chemical Co., Los Angeles.
American - Standard Industrial Div., Detroit.
Aminco Refrigeration Products Co., Detroit.
Anaconda Metal Hose Div., American Brass Co., Waterbury, Conn.
Ansul Chemical Co., Marinette, Wis.
Armstrong Cork Co., Lancaster, Pa.
Avon Tube Div., Higbie Mfg. Co., Rochester, Mich.
August G. Barkow Mfg. Co., Milwaukee.
Beverage-Air Sales Co., Spartanburg, S. C.
Binks Mfg. Co., Chicago.
Brookside Corp., McCordsville, Ind.
A. Brown Products Corp., Union, N. J.
A. M. Byers Co., Pittsburgh.
Cambridge Filter Corp., Syracuse, N. Y.
Century Electric Co., St. Louis.
Chatleff Valve & Mfg. Co., Austin, Texas.
Chicago Valve Plate & Seal Co., Chicago.
Chicago-Wilcox Mfg. Co., Chicago.
Clarage Fan Co., Kalamazoo, Mich.
Coldin Cabinet Co., Inc., New York City.
Coleman Co., Wichita, Kan.
Controls Co. of America, Milwaukee.
***Council Mfg. Corp.**, Fort Smith, Ark.
Curtis Mfg. Co., St. Louis.
Custom-Air Products Div., Pacific Industries, Inc., San Francisco.
Delco Appliance Div., General Motors Corp., Rochester, N. Y.
Drying Systems Co., Chicago.
Duc-Pac, Inc., East Longmeadow, Mass.
Dunham-Bush, Inc., Riverside, Calif.
Eddington Metal Specialty Co., Eddington, Pa.
Edwards Engineering Corp., Pompton Plains, N. J.
Emerson Electric Mfg. Co., St. Louis.
Federal Refrigerator Mfg. Co., Waukesha, Wis.
Fine Products Co., Berwyn, Ill.
Fram Corp., Providence, R. I.
Frigikar Corp., Dallas.
Frigiquip Corp., Oklahoma City.
General Chemical Corp., New York City.
General Chemical Div., Allied Chemical Corp., New York City.
W. W. Grainger, Inc., Chicago.
Gustin-Bacon Mfg. Co., Kansas City, Mo.
Handy & Harman, New York City, Providence, R. I.
Elof Hansson, Inc., New York City.
Hastings Air Conditioning Co., Inc., Hastings, Neb.

(To Be Continued)

Plant Vacation Schedule

Shutdowns Starting June 30 or Earlier

This is the first in a series of handy guides to summer vacation or inventory shutdown schedules announced by manufacturers. It is published to help salesmen avoid useless calls and to assure purchasing departments of adequate stock on hand. CLIP and SAVE for future reference.

Company	Shutdown Period Plant	Office	Shipments From Plant
Armstrong Furnace Co., Columbus, Ohio	6/13-7/4		Emergency
Admiral Corp., Midwest Mfg. Co., Galesburg, Ill.	6/17-7/10	6/17-7/10	None
Lennox Industries, Inc., Marshalltown, Iowa	6/20-7/4	6/20-7/4	Regular
C. A. Olsen Mfg. Co., Elyria, Ohio	6/20-7/4	Open	Regular
Williamson Co., Cincinnati	6/20-7/4	Open	Stock Only
Burr Oak Tool & Gauge Co., Sturgis, Mich.	6/25-7/10		Emergency
General Controls Co., Iron Mountain, Mich.	6/25-7/10	Open	Emergency
Glendale, Burbank, Calif	6/25-7/18	Open	Emergency
Kirsch Co., Sturgis, Mich.	6/25-7/10	Open	Emergency, Stock Only
Brundage Co., Kalamazoo, Mich.	6/26-7/10	6/26-7/10	Emergency, Stock Only
Burnham Corp., Warm Air & Cooling Div., Belle Vernon, Pa.	6/26-7/4	Open	Regular
Dunham-Bush, Inc., Marshalltown, Iowa	6/26-7/10		Emergency
Wall Tube & Metal Products Co., Newport, Tenn.	6/26-7/4		Stock Only
Tenney Engineering, Inc., Union, N. J.	6/30-7/10	Open	Emergency
Viking Air Products Div., Lau Blower Co., Cleveland	6/30-7/17	Open	Regular

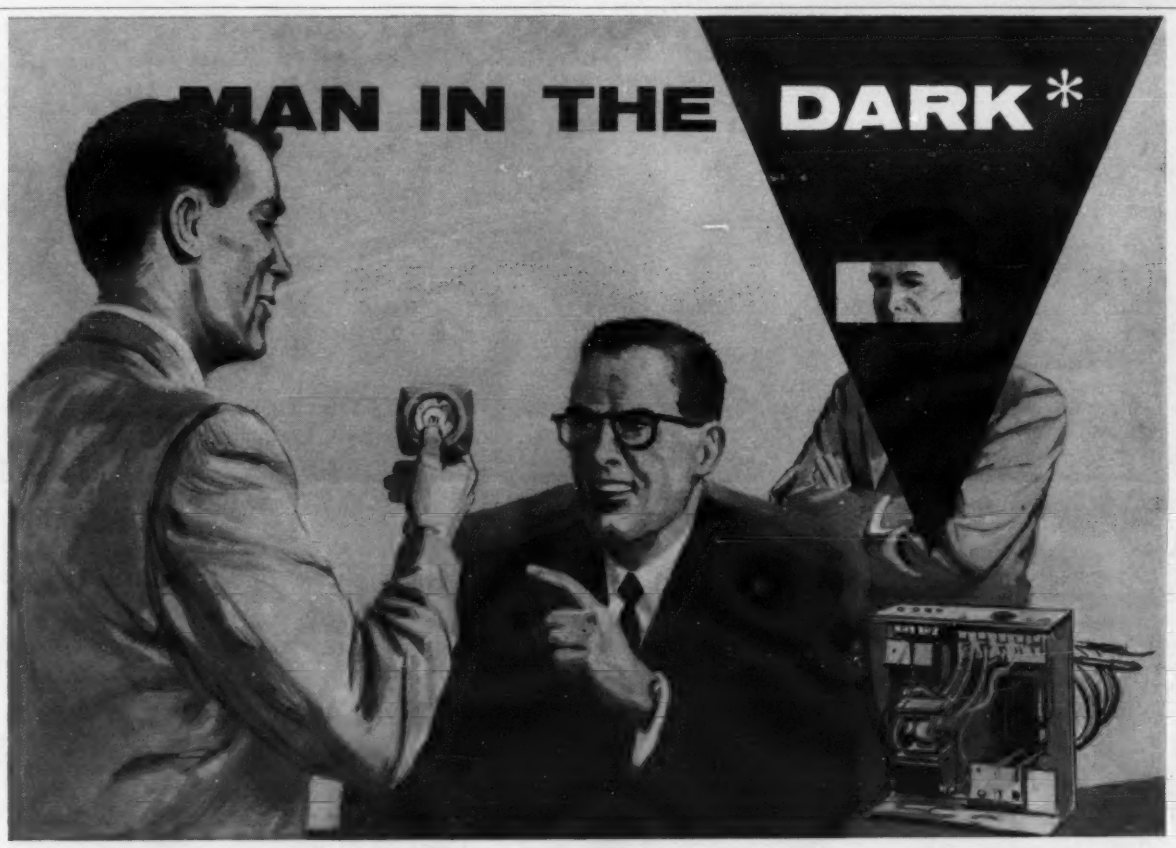
(To Be Continued)

National Plumbing Code Near Issuance

WASHINGTON, D. C.—Third draft on the revised National Plumbing Code was expected to be ready by June 1, according to Malcolm Hope, chairman of the Technical Commission on Plumbing Standards for the U. S. Public Health Service.

Some further revisions are likely, Hope said, but the final code should be issued as soon as possible, he stressed, adding: "We can't go on revising and revising and revising."

Another Public Health Service committee is working on standards for drinking water quality from "its source to the free-flowing outlet of the ultimate consumer."



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Reaching these MARKETS	Serving these FIELDS
• Air Conditioning	• Residential
• Heating	• Commercial
• Refrigeration	• Industrial

Frick Elects Gouger Executive Vice Pres.

WAYNESBORO, Pa. — Election of Matthew M. Gouger as executive vice president and member of the board of directors of the Frick Co. has been announced by J. M. Seabrook, chairman of the board.

M. M. Gouger

Gouger, a vice president of General Aniline and Film Corp., New York City, was formerly president of DataGraphic Systems, Inc., Santa Monica, Calif.

Gouger was previously associated with the Glenn L. Martin Co., Baltimore, where he was vice president and a member of the board of directors.

Mfrs. Sell 218,500 Room Units In April

NEW YORK CITY—The National Electrical Manufacturers Association reported that estimated total industry sales in April by producers of room air conditioners amounted to 218,500 units.

This brought room air conditioner sales for the first four months of 1960 to an estimated 643,600 units, according to the report.

Annis Joins Aurora

AURORA, Ill.—Appointment of Russell K. Annis as manager of engineering at The New York Air Brake Co.'s Aurora Pump Div. was announced by John M. Bals, general manager. Annis was with the Kansas City works of Fairbanks, Morse & Co.

Carrier Sales--

(Continued from Page 1, Col. 1)

weeks ended May 1 were 25% ahead of budget and 5% greater than in the corresponding period a year ago.

Said Cloud Wampler, board chairman: "Every effort will be made to produce satisfactory earnings during the remainder of fiscal 1960. However, the net profit for the year as a whole is bound to be substantially less than in 1959."

The strike which affected the plants of the Elliott division for 12 weeks was settled on April 29 and full production has been resumed," it was noted.

"Almost 90% of Carrier's hourly employes in Syracuse have returned to work, although the strike which began March 2 is still officially unsettled," the company said. "The plants affected have been operating at a near-normal rate since mid-April."

The figures for the second quarter of the present fiscal year were: orders booked $71,080,000; net sales $51,026,000; net loss $1,530,000 or 86 cents per common share. As of April 30 the backlog of unfilled orders amounted to $107,618,000.

Corresponding data for 1959 were: orders booked $72,167,000; net sales $68,586,000; net profit, $2,320,000 or $1.03 per share of common stock; backlog $101,406,000.

The figures for the first six months of this fiscal year were: orders booked $129,481,000; net sales $105,570,000; net loss $1,031,000 or 72 cents per common share.

The comparable 1959 results were: orders booked $122,215,000; net sales $118,066,000; net profit $2,716,000 or $1.12 per share of common stock.

Wampler said the net loss of $1,530,000 "should be compared with the net profit of $2,320,000 for the second quarter of fiscal 1959. Thus, the adverse swing was almost $4 million. It should also be noted that the employes on strike lost more than $4 million in pay."

Wampler also commented: "No favorable changes in the cost-price and competitive situations are anticipated.

"It is becoming increasingly clear that Carrier should do more manufacturing abroad. Plans toward this end have already been made.

"Regarding the longer-term outlook, there are many sound reasons for optimism. Certainly Carrier's major fields of endeavor are highly promising. This is particularly true of air conditioning and electric power generating equipment. As for the former, the two most fruitful markets appear to be residential and industry."

Westinghouse--

(Continued from Page 1, Col. 5)

house air conditioning division operations headquartered at Staunton.

As product sales manager, Cannon will be responsible for product planning, coordinating merchandising programs, and recommending pricing policies for the company's line of electric heating equipment. The line includes industrial electric unit heaters, baseboard electric heating equipment, ceiling-mounted heaters, and wall and portable electric heating units.

C. E. Cannon

A graduate of Auburn (Ala.) university with a degree in electrical engineering, Cannon joined Westinghouse as sales training director for the company's air conditioning division in 1957. Last year he was appointed manager of sales promotion and training.

'Freon'--

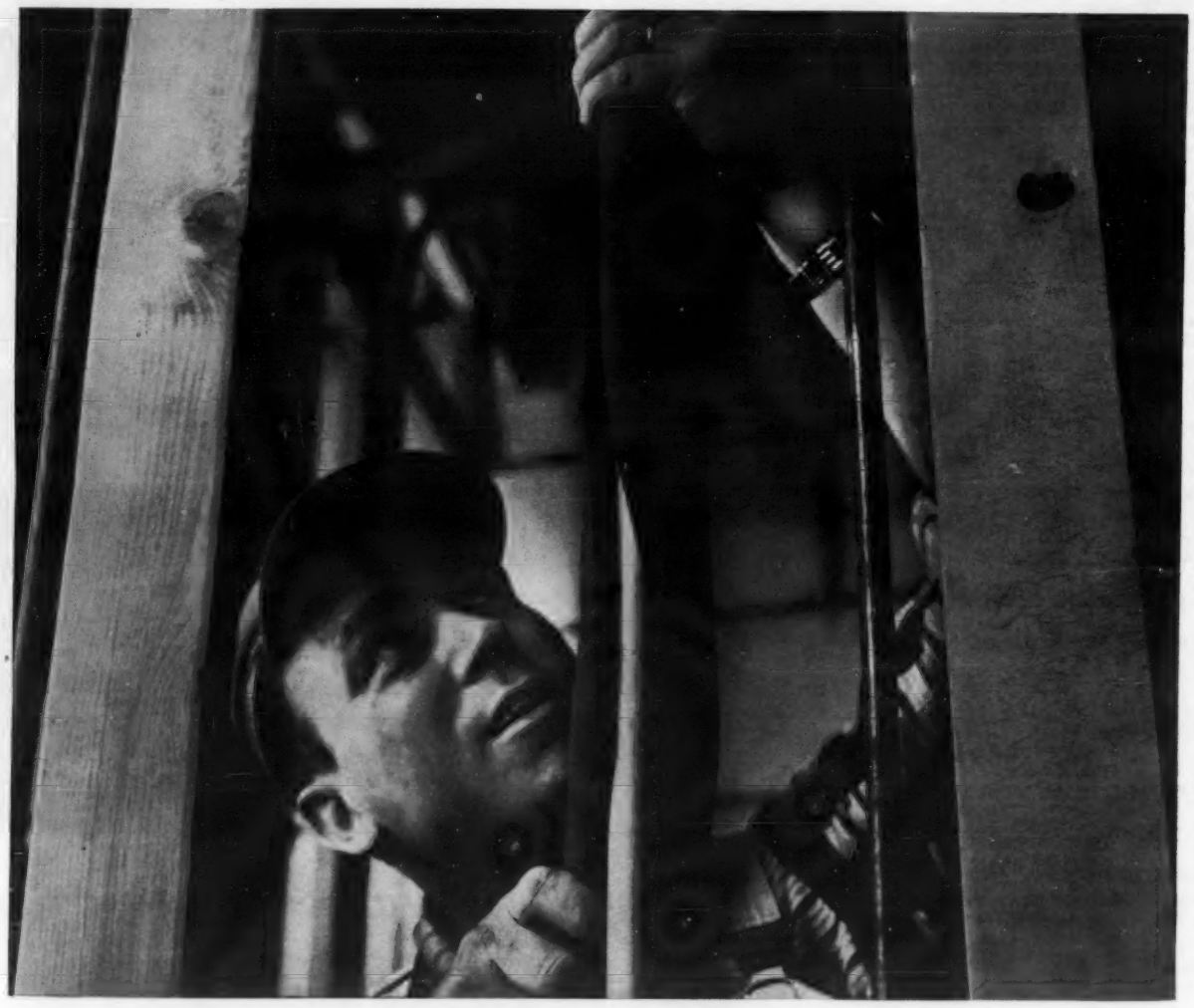
(Continued from Page 1, Col. 1)

contractors and servicemen must have a fair opportunity to earn a reasonable profit on the sale of materials as well as on the labor they perform, we wish to review the following aspects of our sales policies," says the letter which was directed to all "Freon" refrigerant wholesalers over the signature of Joseph C. Hoopes, manager, field distribution. The statement reads:

"1. The 'Freon' Products Div. sells refrigerants to wholesalers who are selected for their sales coverage of (a) unaffiliated contractors, servicemen, retailers, or dealers and (b) to unaffiliated consumers (industrial or commercial) employing their own service personnel.

"2. Our wholesale customers are encouraged to sell to any of the prospective purchasers listed above, but are in no way obligated to sell to all of these classifications.

"3. A firm selling to consumers not employing their own service personnel is performing the function of a retailer. As is well known, we sell through wholesalers rather than dealing directly with retailers."



Easy as wrapping a bun around a weenie

LABOR COSTS FOR INSULATING LINES CUT IN HALF BY B.F.GOODRICH CELL-TITE INSULATION TUBING

EVEN when pipe has already been connected, B.F.Goodrich insulation tubing can be slit, snapped on and cemented in seconds. And, if you prefer, you can get it pre-slit for even faster installation. Slitting is unnecessary for new lines—it slips on straight or bent pipe as easily as a ring on your finger. Installation is so fast that labor costs for insulating pipe can be cut 50% or more over old-fashioned twine-wrapping, skirting and other slower methods.

B.F.Goodrich insulation tubing is made of a tough, flexible rubber with millions of uniform, non-connecting cells that seal out air and moisture. It can be used for insulating pipes carrying hot or cold liquids at temperatures ranging from —20°F to 200°F. Clean and easy to work with, doesn't rub off, chip or crumble. It comes in 6-foot lengths, in many wall thicknesses, that are easy to handle, easy to store.

This BFG insulation is also self-extinguishing, so it can be installed on copper tubing before sweat fittings are made—tubing is merely pushed back and held by clamps while joint is soldered.

Try this labor-saving insulation on your next job. For full information on BFG insulation tubing, call your B.F.Goodrich distributor, or contact *The B.F.Goodrich Company, 180 Derby Place, Shelton, Conn.*

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